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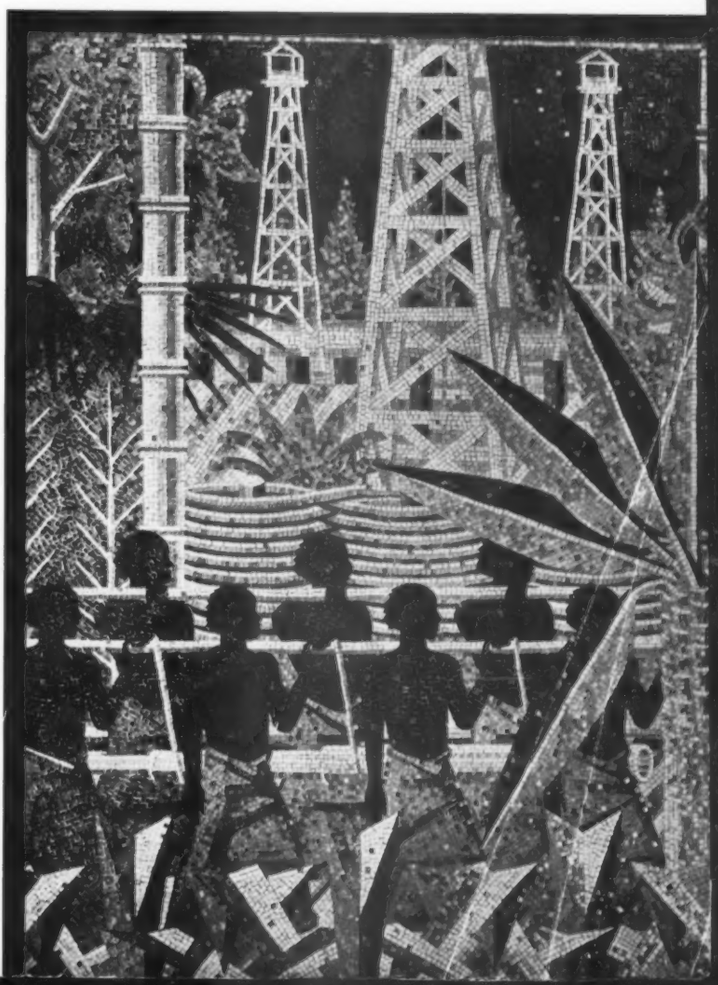

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JUNE
1932

WORLD PETROLEUM

(Incorporating "Petroleum Equipment Exporter")

VOLUME III — EDITOR, E. W. MAYO — NUMBER 6

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PUBLISHED MONTHLY BY

RUSSELL PALMER

153 Waverly Place, New York, U. S. A.

Telephone: CHelsea 2—7398 Cable Address: Installation of a direct wire from Western Union central office and Simplex printer greatly increases speed of delivery of wires and cables to the New York office of World Petroleum. Kindly send wires and cables addressed. Ruspam WUX New York, via Western Union.

Executive-Editor, T. Orchard Lisle

Advertising Manager, S. J. Gallay

▼

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Subscriptions

ANNUAL subscription to WORLD PETROLEUM is offered at the flat rate of five dollars (U. S.) postpaid to any country in the International Postal Union, except in Canada where a special tax compels the publisher to charge $5.60.

For the convenience of subscribers the publishers will accept payment in any of the following currencies at the fixed rate shown below:

Argentina	14 paper dollars
Canada	5.60 dollars
Colombia	5.25 peso (gold)
France	130 francs
Germany	21 Reichsmark
Great Britain	One guinea
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Peru	1.25 libra
Poland	45 zloty
Rumania	835 lei
Russia	1 chervonetz
Venezuela	25 bolivar

Remittances or drafts to the order of the Publisher, WORLD PETROLEUM, payable in New York and London.

Subscriber's name and address should be in Roman capitals on the subscription order.

Official position of subscriber is requested.

Advance notice, if possible, of a change of subscriber's address should be given. Effect cannot be given at once to a change of address. The period of transmission of the subscriber's instructions through the mail extends the time required before the magazine can be mailed to the new address.

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SINGLE copies of WORLD PETROLEUM are obtainable every month, within the delay imposed by the international mail service, at any of the following agencies:

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CARACAS, VENEZUELA—Casa Letcher, Torres a Madrices 22
MARACAIBO, VENEZUELA—Compania Cartografica Venezolana, Apartado No. 331
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NEW YORK—Telephone CHelsea 2-7398 for list of 20 newsstands carrying copies
PARIS—Librairie Brentano, 37 Avenue de l'Opéra
PORT OF SPAIN, TRINIDAD—Davidson & Todd, Ltd., 8 Frederick St.
TAMPICO—La Sonora, S. A., 25 Comercio Oriente

The price of a single copy is 55 cents in Canada, 2 shillings in other countries of the British Commonwealth and the equivalent of 50 cents (U. S.) elsewhere.

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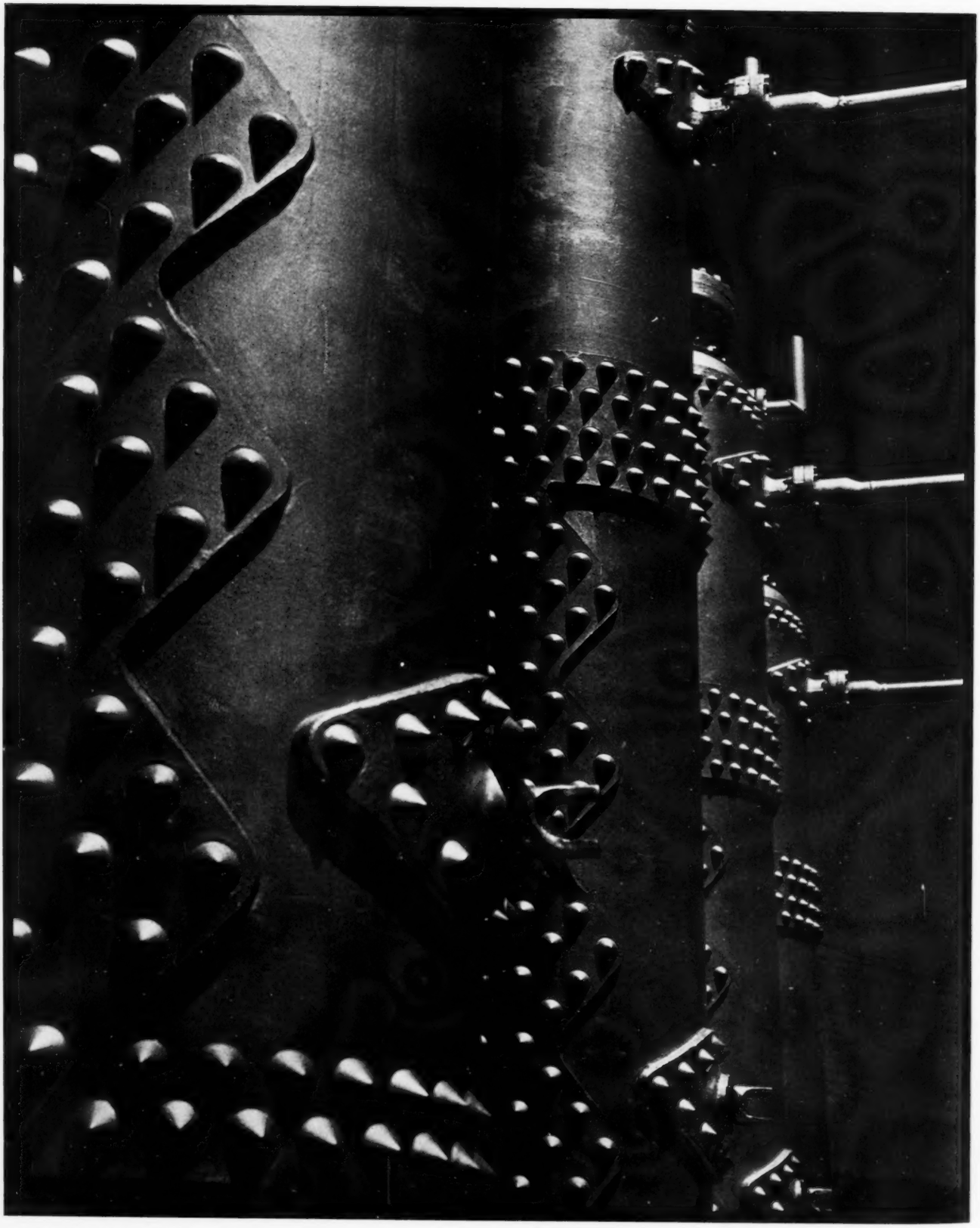
Advertising rates are scheduled in Standard Rate and Data. Copies of the schedule can be obtained on request to the Advertising Manager, 153 Waverly Place, New York, N. Y., or to 110 Fenchurch St., London, or to Bendix Bldg., Los Angeles, Cal.



A study in steel

Will Connell

NEW YORK • WORLD • LONDON

PETROLEUM

An Undesirable Merger

IT SEEMS to us that there are some excellent reasons for doing nothing further with the proposal to merge the Standard Oil Company (New Jersey) and the Standard Oil Company of California. The fact that the Standard Oil Company (Indiana) has become a very large stockholder in the Jersey company seems likely to affect the public attitude and might conceivably lead to widespread disapproval which the present sympathetic administration might be unable to ignore. Is bigness in itself a worthy objective? On the whole the big companies have not demonstrated in this trying period any especial advantage over well balanced small units.

There are some advantages to the Jersey company in acquiring the valuable and well situated California properties but it cannot be said that this acquisition is imperative. The California company has wonderful crude reserves but the recent discoveries in East Texas have greatly improved the position of Jersey's subsidiary, the Humble company, in this respect. Jersey's great foreign business can now be adequately served by Pan American's production outside the United States. The great earning power of the California unit would be useful to Jersey particularly if the foreign markets remain in their present condition which adversely affects Jersey's earning power, but aside from this, which may be only a temporary matter, the arguments against the merger seem to us stronger than those in its favor.

It is possible that the step may be definitely to the disadvantage of the California company, which might prove the loser regardless of the basis on which the exchange was made. While the transaction would be a merger and not a sale it undoubtedly would result in weakening the independent position of the Standard Oil Company of California and to a certain extent in destroying its identity in fact if not in name. Witness the virtual disappearance of the General Petroleum, California Petroleum and other vigorous independent companies in not dissimilar circumstances.

California Standard is already at a great disadvantage because of its size. It is the biggest oil business on the Pacific Coast and as such is the target for all to shoot at. Experience has shown the political disadvantage of this commanding position. In matters of politics the embrace of the California company is too often fatal under present conditions. Nevertheless, the company still enjoys the considerable advantage of being regarded as a domestic company on the Pacific Coast. Those who know the coast appreciate the fact that this is a genuine asset and one which it would be extremely difficult to keep unimpaired after the merger.

The absence of the surging stock market which existed at the time the Pacific Oil Company deal was made removes the possibility of large immediate profits for the stockholders of either company.

Certainly it seems desirable to reconsider the whole subject in the light of changed conditions.

▼

Asking for a Millstone

A NUMBER of leaders in the industry, including outstanding figures like President Beaty of the A.P.I., Judge Ames of The Texas Company and W. S. Farish of Humble, have recently come out in favor of a limited measure of government control in the oil business. We presume each of these gentlemen have in mind the idea that in some way the broad powers of the government will be needed to surmount some of the obstacles confronting the oil business. They may be right. We can only point out that in our judgment there is no such thing as limited federal control. Once in charge of the oil industry the government will endeavor to regulate all departments and will most certainly insist on fixing prices. In a democracy government policies are based not on the sober views of men like Beaty, Ames and Farish but on the demands of the masses, expressed often through organized and hostile minorities. In an effort to correct conditions that are, perhaps, only temporary, leaders in the industry are suggesting a control beyond their power. Once government control of the petroleum industry is begun it will be extended and strengthened until the return to the status of a private enterprise becomes impossible. Coming at a time when theories of government control of industry have acquired a strength hitherto unknown, the suggestion that the petroleum industry voluntarily surrender some of its rights is most unfortunate, and it is to be hoped that a movement in this direction will not become general in the industry. Has the time come for the oil industry to invite this? Is the experience of the railroads to be forgotten? Into what are we drifting?

World Oil Conference Fails

Agreement Unsigned After Four Weeks Discussion. Export Quota Plan Difficult to Apply. Authority of Russian Delegates Doubted. Another Conference Under European Auspices and Ultimate Agreement Probable.

By Russell Palmer

PROSPECTS for a successful termination of the Arnott conference vanished as this issue of WORLD PETROLEUM went to press. On June 2 Charles E. Arnott announced to the press that the conference had failed to reach an agreement.

The Russians were expected to sign Friday May 27th. Action was deferred until May 31st and then put over until the following day, giving rise to some doubts as to whether the Russian conferees had full power to act.

The sensible stipulation had been made in advance that all parties should send only representatives with full power to make decisions on the spot. This provision accounted for the presence of men of the calibre of Moffet, Kessler, Fraser and Watson. As negotiations became protracted the feeling grew that the delays arose because the Russians, in spite of their bold front, were actually referring everything back to Moscow by cable and wireless. Consequently a number of delegates in the allied group began to feel that further negotiation was futile and the conference was discontinued.

Ushered in under favorable circumstances conference preliminaries began with an exchange of social courtesies for all but the Russians. These hospitalities promoted a friendly spirit of cooperation amongst the Anglo-American group. An early agreement was freely predicted. Once the realities of the situation had to be faced this cloud of rosy optimism dissolved. Those whose hopes were raised may console themselves with the thought that time may prove it was better for the conference to have failed than to have signed an agreement on the lines originally contemplated. The incidental benefits of the conference were many and extended to all the groups. There is every reason to believe that with this conference ended before bad feeling developed, it can be reconstituted in Europe at a later date to consider safer and more practical measures.

(Copyright by Russell Palmer)

It may be a mistake to term what has been going on in New York a world conference. There have been a series of meetings of various groups but very few round table sessions. Some of the principals have not met face to face during the entire four weeks. What has actually been happening is that a number of important English, American and Dutch oil company representatives have been meeting in New York to consider a group of common problems foremost among which has been the situation created by Russian marketing operations and recently the question of Roumanian production. This group has consisted of J. B. Aug. Kessler, Royal-Dutch group; William Fraser, Anglo-Persian Oil Company, Ltd.; Robert Irving Watson, Burmah Oil Company, Ltd., and Shell Transport and Trading Company, Ltd.; J. A. Moffet, Standard Oil Company (New Jersey); Charles E. Arnott and Harold F. Sheets, Socony-Vacuum Company; Capt. Torkild Rieber, The Texas Company; Judge G. T. Stanford, Consolidated Oil Company; William Irish, Atlantic Refining Company and G. R. Nutty, Gulf Oil Corporation.

The procedure followed has been for the proposals of this group for dealing with the Russian problems to be transmitted by a committee composed of Messrs. Arnott, Moffet, Sheets, Kessler and Watson, to the Russian delegation composed of Phillip Rabinovich of the Commissariat for Foreign Trade, K. Riabovol, chairman of Soyouznefteexport and R. N. Fridman, vice president of the R. O. P. assisted by A. A. Santalov of the petroleum division of the Amtorg Corporation.

The conference began with a proposal that the allied group take over the entire Russian export for a period of years. The Russians refused to do this and made it plain that they would not part with any of their distributing facilities.

All of the plans which were considered at these meetings were based on the establishment of an export quota for the Russians. This was tentatively fixed in the beginning at last year's figure of 5,300,000 tons. It was proposed that the Russian exports be limited to this figure for a period of ten years during which time sales were to be made not below the minimum prices fixed by the syndicate which was to guarantee a market for the full quantity. The Russians demanded and received a right to scale their quota upward during this period by whatever percentage consumption increased. The plan provided for a quarterly check-up on Russian sales at which time the syndicate would take over the unsold residue.

The principal points of disagreement rose out of the reluctance of the Russians to make an agreement for more than three years and the unwillingness of the "allies" to give the Russians complete liberty of action in all markets to dispose of their quota in any way they saw fit. The Russians seemed unwilling to attach adequate weight to the fact that the group's offer was the equivalent of guaranteeing the success of the Russian export business for ten years to come, a considerable liability to incur at times like these. It was naturally felt by the group that in view of the liberality of this offer that some limitations should be put on Russian activity.

The Russians desired to exempt certain present business, principally government contracts from their quota, a demand which proved unacceptable. The allied group wished to narrow its liability to purchase unsold residue down to the surplus between present definite market requirements and the outside quota figure which the Russians were unwilling to do.

The verdict of history will probably be that the conference has failed not because it was undertaken in the wrong spirit or because of the stubborn adherence to certain detailed demands but rather because the approach which has been made to the whole problem is basically unsound. The conference has been seeking to settle the Russian problem by one stroke of the pen, by fixing the total quantity of petroleum products which Russia shall be permitted to export during a given period. There is only one situation under which such a plan could be expected to work and that is if Russia was prepared to retire from the oil export field and turn her entire quota over to others to sell. This Russia cannot reasonably be expected to do.

It should not be difficult to demonstrate that the general export quota plan has a number of important weaknesses. Instead

of preserving the status quo in the principal markets it leaves the Russians free to concentrate their exports in any market which may be especially profitable or important from a strategic point of view. The Soviets can easily escape from the quantity limitations of any general export quota by granting further oil producing concessions like that given to the Japanese in Sakhalin. The German or Italian Governments for example might like to make a contract of this sort. It should be borne in mind that the Soviet Government does not permit its action in such matters to be limited by the Naphtha Syndicate. In this case what happens to the quota? The history of the Emba negotiations are very illuminating in this respect. In this instance, the concessionaire operating this concession, better situated to supply the domestic and the foreign market, was offered a ton of oil for export in exchange for every ton produced for domestic consumption. The Russians are very wary about creating a complete monopoly, especially in the absence of substantial advance payment. Although Mr. Arnott made it clear early in the conference that a loan to the Russians was not contemplated it is understood that an advance to the Russians was considered in the latter stages of the conference.

How effective are the price limitations of an export quota arrangement? The Russians have recently closed a contract with the Spanish monopoly providing for the exchange of oil for lead, copper, cork etc.

Where oil is given in exchange for goods whether prices are maintained or not depends entirely on the arbitrary value placed on the articles traded for oil. Arrangements of this sort leave a wide scope for evasion and would certainly be a fruitful source of controversy.

A single agreement has the further disadvantage that once broken the breech extends along the entire front. In a cable of many strands some may give without the rope itself parting.

In the face of such possibilities what is there to recommend about one general settlement with the Russians? It would seem safer and more practical to take important markets of the world up one by one and make a separate deal on each. The British market should certainly come first.

From the very beginning this journal has taken the position that a deal with the Russians is desirable and we still expect to see this hope realized but when we say a deal with the Russians we mean an agreement which is practical, workable and fair to both parties. While the Russians doubt the sufficiency of the offer which has been made to them the fact remains that an offer to preserve for a number of years the unusually favorable position they occupied last year errs on the side of liberality if anything.

As a matter of fact the Russians were dealt with more severely when they were at the height of their power in 1928 and there was no special reason for greater liberality at the Arnott conference.

It is possible to understand why producers in other lines of business should be afraid of the Soviet. Wheat, matches, manganese and timber are easy to distribute. The oil industry, however, is the best centralized business in the world. Success in it depends upon the possession of distributing facilities which cannot be built up in a day.

The Russians have a distributing organization in England, the beginning of one in Germany, Turkey and Scandinavia but this is not such a threat to the existence of the petroleum industry as to warrant paying an exorbitant price for cooperation.

While Russian production has increased and is increasing the Russians are not as great a menace today as they were prior to 1931. It is no longer easy to find independent promoters to finance new distributing organizations. Where are the Medways of 1932! No money is available for ventures like these today.

The Russians were in a splendid position to undersell their competitors when prices were high but today when they are confronted with the necessity of selling six or seven million tons a year with gasoline prices at from 3 to 4 cents per gallon and kerosene sold in Roumania at 1½ cents per gallon the prospects are decidedly less attractive. Today the Russians do not average more than $2.50 per ton for fuel oil.

Instead of an offer to preserve the 1931 position being regarded by the Russians as the starting point for negotiations they should have fully realized that it is one of extraordinary liberality because not only is consumption declining but it is a fact that they enjoyed in 1931 an unusually favorable position.

The following facts are worth taking note of:

1 — The Russians shipped to England in 1931 under the Medway and Anglo contracts 310,000 tons of kerosene; 250,000 tons to the Medway at a price of 75/ per ton and 60,000 tons to the Anglo at a minimum price of $16 per ton, while the average price in Roumania was not more than $6 a ton.

2 — They have shipped 170,000 tons to India at a minimum price of $16 a ton and an additional 16,000 tons at $7.

3 — They have shipped 30,000 tons to the Levant at a minimum price of $16 per ton. In fact, 80 percent of their exports of kerosene brought prices higher than any other producers averaged in 1931.

The Russians have been heavy loosers only where they have been forced to operate their own distributing organization and have suffered from cut-throat prices — but the Russians did not distribute more than 10 percent of their total exports themselves. Ninety percent was sold to Socony-Vacuum, Anglo, Medway, the French independent group, A. G. I. P. in Italy, etc. Therefore, their losses have

J. B. Aug. Kessler, Joint Managing Director of the Royal Dutch-Shell

not been so heavy proportionately as those of the private companies. If the Russians have to go out and market themselves under present circumstances without facilities, using scattered shoestring promoters, doubtless they will be unable to realize more than transportation charges on some of the oil they ship.

In the light of facts like these it is very generous to guarantee to the Russians to preserve to them for many years the relatively favorable position they enjoyed last year. All their contracts with members of the group have come to an end except the Indian contract.

While the conference opened under the fairest of all auspices—a rising oil share market, and there were voluble assurances of good will on all sides there existed nevertheless substantial grounds for distrust in both main groups.

The Russians could not forget that following the collapse of the Nobel Egyptian agreement in 1930 their Vacuum Egyptian agreement was cancelled in 1931. The Russians also felt that they had made an agreement for England and lived up to it in good faith without securing the benefits they had expected.

Some things occurred after the meeting had been decided on which tended to shake the faith of the Anglo-American group in the Russian pledges. These were a series of vicious attacks on some of the largest interests participating in the conference.

The day the Russian delegates sailed for New York the Russian papers published a particularly vicious attack on Sir Henri Deterding.

Sir Henri is not a man given to studied reticences but his silence under these attacks is greatly to his credit. In spite of great provocation he ignored this malicious assault and kept his peace. In fact he has made no public comment of any character during the conference.

As an example of the fact that the Soviet did not respect its truce we would like to quote the following Associated Press dispatch which appeared in the New York Herald Tribune on May 24th:

Soviet Hears Rockefeller is Financing White Army

'Absurd' Says Group Here Close to Oil Operator

Moscow, May 23. A Berlin dispatch to the Tass (official Russian) News Agency tonight said "well informed sources" had reported a financial group "closely connected with Rockefeller" as rendering material assistance toward the organization of White Guard detachments for the Far East.

These advices declared that "White Guard centers" in Europe and America were conducting vigorous organization work and that representatives were negotiating secretly in the United States and France for the purchase of ammunition for 25,000 men.

The dispatch added that the financial difficulties which previously had hampered the organization efforts of the Czarists had been overcome for the moment by aid furnished by a financial group.

This charge was groundless and was promptly denied by a spokesman for the Rockefellers but its appearance at a time when the Soviet delegates were in conference with Mr. Moffet, vice president of the largest Rockefeller unit is a curious side-light on the proceedings.

As a specimen of the Russian attacks on Deterding we give the following which was published by the Russian paper "Za Industrializatiu" No. 98, April 27, 1932, while the Russian delegates were embarking for the conference:

Royal Dutch Shell on Eve of a Crash—Deterding Removed from Board of Directors

Berlin, April 25th — Under the above title the Dutch paper "Maasbode" (Organ of Catholic party) has published sensational information about the financial position of the Royal Dutch Shell which is headed by Deterding. The Company has applied to several Dutch bankers for immediate assistance in the form of a loan amounting to 80,000,000 Guilders. The newspaper further states that Deterding is no longer chairman of the board of directors of the company, having been replaced by Kessler who is joint general manager of the company and also represents a group of consolidated Dutch bankers.

According to this paper the shareholders of the company have voiced several protests against considerable bribes which Deterding has frequently given to political leaders of various countries for political reasons. Deterding, the same paper states, is reported to have handed over £20,000 to the Roumanian Prime Minister Yorga and over 5,000,000 Francs to Carol, King of Roumania, during his stay in Paris. The White Emigres in Paris such as Bessedovsky and General Miller are said to have received from Deterding large sums of money. Hitler has also received from Deterding over 5,000,000 Guilders and the total sum spent by Deterding in bribes is said to exceed 40,000,000 Guilders. This free way of spending resources of the company which belong to the shareholders explains his resignation from the position of chairman.

It should, however, be pointed out that the Russian press did not reflect the official attitude toward the Conference.

It should not be assumed that the conference was a total failure in every sense of the word. There were substantial indirect benefits to both main groups.

The greatest single achievement of the gathering was the restoration of the entente cordiale among the Anglo-American participants. Credit for this belongs to a man who did not sit in the conference or meet the Russians vis-a-vis. We refer to W. C. Teagle whose friendly human interest in the visiting English group and courteous hospitality has cemented anew a relationship which was impaired by the division which arose over the original Russian purchases in 1925. Mr. Teagle has demonstrated again that he is a man of tact and vision, constructive in his attitude towards the industry and incapable of pettiness or intrigue.

It would make a further entry to the credit of the conference if the Indian agreement of 1928 had been revived.

In spite of the fact that the Russians will go home without an agreement it can be said that in the broadest sense they benefited greatly. The Russians entered the conference with their stock

P. Rabinovich

K. Riabovol

A. A. Santalov

at a low ebb and their status very doubtful. They have been given a recognition which will be invaluable to them in petroleum export operations. Buyers who were dubious about the desirability of an alliance with the Russians have been made (quite unintentionally as far as the Anglo-American group is concerned) to feel that the Russians hold the whip hand. While the conference was deliberating the Spanish monopoly closed a fresh contract with the Russians who far from declaring any trade truce took advantage of the splendid advertisement they received to strengthen their position all along the line. Soviet Russia will doubtless say "well done" when comrades Rabinovich and Riabovol return, even though they do not bring back an agreement.

It is difficult to write dispassionately about the policy pursued in the matter of publicity. Certainly no publicity at all would have been preferable. This would have been possible easily if the meeting had been held in Europe. Once it was decided to hold these meetings at New York in one of the largest, newest and most conspicuous hotels and the newspapers were in possession of the basic facts the issue should have been squarely faced and the problem placed in skilled hands.

The newspapers were allowed to print their own slightly garbled but mainly correct stories without any official interpretation. The Russians arrived a few days later and stated to the press they had no idea why they were here. Two days afterward they made a voluntary statement that they had been invited here for a conference and denied that the Russians were responsible for the disorganized international market.

It was not until the newspapers began to print the inside facts about the deliberations that a policy on publicity was adopted. We do not believe that it was necessary to give any statements to the press at that time but once this policy was embraced it should not have been made farcical.

Writing as one who was present we can only state that it was unfortunate that this matter was placed in the hands of Mr. Arnott. Capable through he may be in other directions he was obviously unfitted for this delicate work and his attitude toward the press coupled with the futile ending of the conference added nothing to his prestige.

Admittedly publicity is not an easy thing to handle yet men of the calibre of Mr. Teagle, Mr. Holmes and many others have always been able to meet newspaper men when necessary, talk to them frankly, win their respect and enlist their cooperation.

Greater consideration might well have been given to the legal situation created by the holding of this conference in the United States, because of America's stringent and unusual anti-trust laws, which most thinking people deplore but which are on the statute books just the same. The American promoters of the conference appear to have assumed that because it is legal for them to act in concert on export matters and because the problems under consideration are mostly outside of the territorial jurisdiction of the United States, that they enjoyed complete freedom of action under the law.

This is questionable. This conference was not constituted in such a way as to take advantage of the Webb-Pomerene Act liberalizing the anti-trust laws and even had this been done, competent legal opinion holds that there would still be danger that the conferees might make themselves liable to prosecution particularly under the Wilson Tariff Act.

The well-known New York attorney, Benjamin S. Kirsh, former special assistant to the United States attorney in New York in the prosecution of Sherman Anti-Trust cases and author of TRADE ASSOCIATIONS: THE LEGAL ASPECTS, points out that the operations of this conference are governed not by the Webb-Pomerene Act but by the Sherman Anti-Trust Law and particularly by the Wilson Tariff Act as construed by the Supreme Court of the United States in the Sisal case decided in 1927.

In that case, the Court stated:

"Sections 73 and 74 of the Wilson Tariff Act, as amended, declare unlawful every combination, conspiracy, trust, agreement or contract intended to operate in restraint of trade in, or free competition in respect of, or intended to increase the market price of any article when one of the parties is engaged in importing the same. . . ."

The Court further says:

"Here we have a contract, combination and conspiracy entered into by parties within the United States and made effective by acts done therein. . . . The United States complain of a violation of their laws within their own territory by parties subject to their jurisdiction. . . . They are within the jurisdiction of our courts and may be punished for offenses against our laws."

In conclusion, the Court notes:

"Moreover, appellees are engaged in importing articles from a foreign country and have become parties to a contract, combination and conspiracy intended to restrain trade in those articles and to increase the market price within the United States. Such an arrangement is plainly denounced by Sec. 73 of the Wilson Tariff Act, as amended."

If this is the case the dangers attending such a conference in New York are ponderable. To give an hypothetical case, Roumanian gasoline is now being imported into the United States by the Sunnyside Oil Company of Detroit. About 70 percent of the Roumanian production is represented at the conference which discussed Roumanian problems recently. If the operations of the conference have the effect of increasing the price of Roumanian gasoline and the price goes up in Detroit, the participants in the conference would in all probability become liable under the provision of the Wilson Tariff Law.

Since the problem is a European one and there are no specially urgent reasons

R. N. Fridman

why this conference had to be held in New York, does it not appear foolish and dangerous to do so in the face of this possibility?

The best that can be hoped for is that the delegates having recognized the futility of further deliberations in New York, will reconstitute the conference in Europe at an early date for a fresh, more practical and safer approach to this important problem. This much may be worth considering. It is better perhaps for the Arnott conference to have failed than to conclude an agreement on the lines contemplated. Such an agreement might prove unsound and unworkable and its inevitable collapse at a later date would have created a bitterness which might make it impossible to restore harmony for many years to come.

▼

Notes on the Russian Delegation

SOVIET enthusiasts claim for their form of government all the advantages of centralized control. Without unfriendliness it is possible to say that while this may exist in theory it is difficult to demonstrate in practice.

Far from being a unit the Soviet Oil delegation is an interesting grouping of opposing forces which illustrates clearly how much division of opinion exists behind the imposing facade of Soviet unity.

Jealousies exist in the Russian government the same as they exist among other governments and considerable jealousy has existed on the question of foreign trade. For a long time the Commissariat of Foreign Trade was controlled by the late Krassin, who in fact established it. He was strongly opposed to permitting the trusts to engage in foreign trade directly. The trusts, however, grew in strength and fought the Krassin policy successfully even while he was still alive, establishing and confirming in many cases their right to trade independent of the commissariat. The first strong man who opposed Krassin in this policy was the famous communist Nogin, head of the Textile Trust, who came to America as early as 1923, established his own office in New York and carried on his own policies which in many cases were in direct conflict with Krassin, head of foreign trade.

Since that day numerous trusts have been growing in strength while the Commissariat of Foreign Trade has been considerably weakened. The best proof of this is that Bogdanov who represents the Soviet government and the Foreign Trade Commissariat in the United States as the head of the Amtorg Trading Corporation has had little to do with the oil industry and this conference. His predecessor and former chief Saul Bron tried to interfere in the oil business, lost his job and his prestige — a lesson to Bogdanov.

In the case of the delegation which came to the International Petroleum Conference from Russia the Foreign Trade Commissariat sent its representative in the person of Rabinovich, selected for the most important reason that he speaks English better than most of the communist leaders. Another reason why Rabinovich was selected is because he has lived in both the United States and England and is presumed to understand the Anglo-Saxon mentality. Rabinovich was at one time manager of the Russian English trading unit, Arcos, Ltd. When the Arcos administration was in disgrace and the chairman Kwiatkov was imprisoned for three years, Rabinovich was saved because he was a stalwart of the party. He was, however, sent for a long time to a small place in Siberia to prove his loyalty to the party and to purge himself of contacts in capitalistic countries.

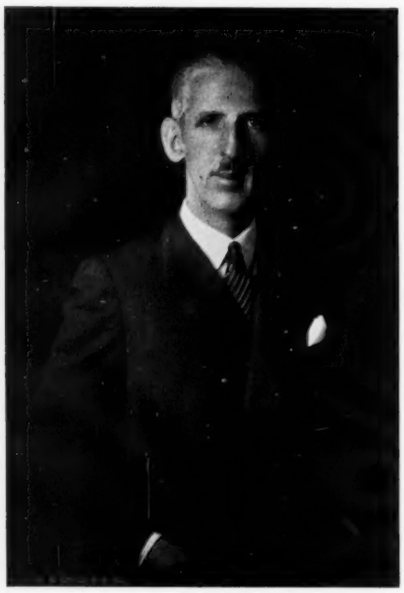
For this reason Rabinovich, while he knows the Anglo-Saxon mind and knows how to trade, has not, in the opinion of experienced observers the same strength as those trusted communists who know nothing of any language save Russian and have never been tainted by breathing the atmosphere of the capitalist countries.

Riabovol is the strong man of the delegation. His loyalty to the party has never been questioned and he has never been exposed to the dangers of capitalism. The fact that he was included in the delegation although he speaks no language but Russian is a key to the strength of his position.

It may surprise our readers to learn of Fridman that he is not a communist and is therefore to be considered only as a special or expert, what the Russians themselves call a "spetz." No individual in the Naphtha Syndicate has established a longer record of constant service than Fridman except perhaps Zukerman and Poliak who was shot a few years ago. It is obvious that while Fridman does know the situation thoroughly, specially in the English market, unfortunately as a non-communist he can act only as an advisor without authority.

Those who know the situation behind the scenes in Soviet Russia see two opposing forces at work, the representative of the Foreign Trade Commissariat and the chief delegate Riabovol. Although he has been head of the Naphtha Syndicate for years Riabovol has never signed a big agreement and consequently has never before faced Russian opposition from the sources which oppose such commitments.

Wm. Fraser



R. I. Watson

Observers feel that Rabinovich genuinely wants an agreement. As to Riabovol no one knows. The real authority lies in Russia with the Politburo and, quite unofficially of course, with the Central Committee of the Communist Party. It remained to be seen whether Rabinovich would be authorized to close a deal at this time: but, as predicted by WORLD PETROLEUM for several weeks past, the forces in Russia opposed to the Conference have proved triumphant, terminating the meeting with credit, in the form of added prestige, to Russia.

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Franklin Attacks Conference

ON May 16, 1932, Wirt Franklin, President of Independent Petroleum Association of America, issued a severely critical statement regarding the conference, which read as follows:

Division of the world's petroleum markets among the great oil monopolies with increases in the price levels of fuel oil and gasoline will be worked out in New York City this week by representatives of the Standard Oil and other American oil-importing corporations, the Royal Dutch Shell, the Burmah Oil Company, and the Russian Soviet. No representatives of the consumers or of the independent American producers or of the general public have been invited to attend this meeting which plans their exploitation, said Wirt Franklin, President of the Independent Petroleum Association of America, and a member of the Board of Directors of the American Petroleum Institute, which also has not been asked to sit in on these conferences.

The plan of the oil monopolists as semi-officially announced, provides for an increase in the world market prices including an advance of 45 cents per barrel over the current posted schedule of bunker oil and 2½ cents per gallon over the present export price of gasoline. This increased price, intended to add tremendously to the profits now reaped by these oil-importing monopolies, is not dependent upon the adoption of the proposed oil excise taxes, but is intended to become effective regardless of them.

In spite of the American anti-trust statutes, this world oil combine announces that it plans to 'harmonize American production with proration in the world oil producing countries' and that if the rank and file of the American industry does not cooperate, 'the major companies in this country would still be in position to make American cooperation largely effective through close control of their own operations.' This is equivalent to a threat of boycott to the American petroleum industry and the replacement of American production by foreign oil to the complete and devastating ruin of this industry upon which 22,000,000 Americans depend for all or much of their livelihood. That this is true is evidenced by the fact that the 'inspired' discussion of the program for the New York meeting plainly states that, 'American participation in a world rationalization plan is naturally governed to a considerable extent by the quantity of crude and refined petroleum imported into the United States.'

The recent $146,000,000 deal by which the Standard Oil Company of New Jersey absorbs the foreign properties of the Pan-American Petroleum and Transport Company appears to be another step not only toward the formation of the world oil combine, but toward the reassembling of the scattered units of the Standard Oil monopoly which was dissolved into separate companies by the courts in 1911. This re-creation of the Standard Oil has been proceeding during the past few years without any interference from the authorities. The Standard Oil of New York announced in 1930 its intent to absorb the Vacuum Oil Company. In the following year the Department of Justice announced that it would not appeal from the decision of the circuit court approving this gigantic merger, moving toward monopoly. It was at this time that the president of the newly merged companies announced that 'the large integrated units are the only ones that can survive the present oil competition.' The competition referred to was based upon the enormous floods of cheap foreign oil used as a club to beat down the domestic price. With the elimination of the independent American producer through this price reduction program accomplished through importation of foreign oil, the monopoly will be enabled to raise the prices and swell its profits to any figure it may desire.

During the early history of the oil business in the country, the Standard Oil Company controlled the price, dominated the markets, and was practically the absolute master of the entire industry. After the Standard Oil Company was dissolved into separate companies by the courts in 1911, the independent producers had, for a while, a voice in the conduct of the industry. Genuine competition existed. Exploration and development work added billions to our national resources. General employment and prosperity prevailed in the oil States. From 1911 to 1926 better prices were paid for oil and the industry as a whole was largely prosperous. The Standard Oil, with other major companies, however, developed foreign oil fields, and, through their increasingly large importations depressed the price to the American producer and once more assumed control of the market, a position which, according to the Federal Trade Commission, they hold at the present time.

To dominate the American petroleum industry and to supply the American demand which is 72 percent of the world demand for oil products, control of the cheapest foreign sources of petroleum is essential. Mexico has outlived its day as a source of such oil. Venezuela with its peon labor, its freedom from burden-some taxation and from royalty claims is being exploited fully today. Russia, now second in terms of oil output, is already entering as an element in the American market. Behind these there stands the unreckoned volume of potential petroleum in the rich fields of Iraq. The production cost of these oils is practically negligible. Beside them, Venezuelan oil is a costly product. Small wonder that those aiming at world empire in terms of oil are rapidly gaining title to these untouched reserves.

Our whole economic system is involved in this contest. Floods of Venezuelan oil have destroyed much of the purchasing power of 20,000,000 residents of our oil States. When Soviet oil and Iraq oil, in successive waves, flood us, America's purchasing power will fall even lower. We will not be able to afford the luxury of our own manufactured goods. Not only cheap foreign oil but cheap foreign products of all kinds will be demanded and all tariff walls, undermined by the economic forces set in motion through the breach made by imported oils, will crash.

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BURTON K. WHEELER, democratic senator from Montana, submitted the following resolution (S. Res. 216) to the United States Senate on May 20:

> Whereas the officers and directors of the Standard Oil Company of New Jersey and the Standard Oil Company of California are reported to be seeking to consolidate these two companies into one organization, notwithstanding the decisions of the Supreme Court of the United States and notwithstanding the provisions of the Sherman Antitrust Act: Now, therefore be it
>
> *Resolved*, That the Attorney General of the United States is requested to advise the Senate what, if any, action his department has taken or intends to take with a view to preventing the consolidation of the Standard Oil Company of New Jersey and the Standard Oil Company of California.

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TANKER VINGA, with a cargo of 10,000 tons of cracked gasoline, has been dispatched by Steaua Romana to Montreal.

SHELL Company of Canada, Limited, is reported to be contemplating construction of a $2,000,000 refinery in Montreal East while the newly formed La Salle Petroleum Refinery, Limited, is building a $1,500,000 refinery in the same area. Completion of these two plants will bring the refinery investment on the Island of Montreal up to nearly $20,000,000.

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PETROLEUM Heat and Power Company, affiliated with Pan American Petroleum and Transport shows an increase in profits for the first quarter of 1932, increased volume of business compensating for the lower cost per unit to the consumer. Oil and oil burners sold by Petroleum Heat and Power have reached the lowest price in their history. Net earnings after taxes, depreciation, and all write-offs amounted to $316,820 for the first quarter of 1932 compared with $129,239 for the first quarter.

Controlling Depreciation and Depletion Charges by Reducing Asset Values

Adoption by Barnsdall and Other Oil Companies of Accounting Policy Allowing the Elimination of Depreciation Charges Centers Attention on this Method.

By Myron J. Boedeker

A HEAVY burden of depreciation and depletion has, in the past two years, transformed many a hard-earned operating profit into an unpleasant "net loss after depreciation and depletion." With the realization that lowered levels of prices and business are not brief and transient afflictions from which recovery will be rapid, business men are turning to an old idea in new dress as a possible relief.

Years ago many business men entirely ignored depreciation or depletion or varied their periodic allowances to correspond with fluctuations in earnings. The suggestion is made that we do much the same thing today, following a more modern method perhaps, but achieving the same result—an improved earnings statement.

"Reduce or eliminate fixed asset values," it is said, "and depreciation and depletion will shrink to reasonable proportions or disappear entirely."

Depreciation Process Unaffected

ADMITTEDLY, the *process* of depreciation (the march of fixed assets to the scrap heap) and depletion (the exhaustion of natural resources) cannot be reduced or affected by accounting procedure. They are inexorable results of the operation of physical and economic forces. But the expense charges for depreciation and depletion which are reflected in a corporation's financial statements are subject to adjustment and control. Properly stated, they represent provisions made in accounts for the purpose of allocating cost (or value) of plant, equipment, oil reserves, and similar assets to operating expenses of the periods comprising their useful life. The provisions for depreciation and depletion are at best but estimates based on inexact data and controlled by principles on which there is by no means unanimous agreement even among accountants.

As to current practice among business houses, "The most interesting fact about the depreciation policy of American industry is that there is none." This statement was made by Lawrence H. Sloan, of Standard Statistics Co., Inc., after a study of the published income accounts and balance sheets of more than 500 leading industrial concerns.

Since the subject of depreciation and depletion allowances in corporation accounts is not settled either in theory or practice, there is opportunity for consideration of new ideas or revision of old ones. The idea of reduction of capital asset values for the avowed purpose of decreasing or eliminating charges for depreciation and depletion expense, is being given particularly serious thought in the oil industry, and in several instances recently the plan has been put into practice.

Two Types of Reduction

THE discussion which follows will consider two types of reduction in asset values, i.e. (1) the write-down to a figure considered to be a fair but conservative valuation of the assets under present conditions and existing price levels and (2) the absolute write-off of values so that the assets are represented in the balance sheet by a nominal figure of $1.00.

When asset values are written down, whether to present values or to $1.00, the amount of the reduction is charged off against surplus—ordinarily against capital surplus with a resulting decrease in the permanent or invested capital of the business. The lowered asset value is spread over the estimated years of useful life or barrels of recoverable oil, and the expense charge is accordingly smaller than before the write-down. If the assets are written down to $1.00, the expense charge is, of course, entirely eliminated.

The conservative accountant's first reaction to the suggestion of asset reductions to decrease depreciation and depletion expense will ordinarily be one of emphatic opposition, particularly vigorous against write-off to a nominal $1.00 value. It smacks of manipulation, he says. It is diametrically opposed to doctrines the profession has tried for years to impress on business men—that depletion and depreciation are facts, which must be recorded regardless of operating results of the period. The practice assumes that a major item of expense may be controlled by the mere recording of entries in accounts, and this the accountant says is not the case.

Further thought on the subject, however, may lessen the accountant's opposition, or at least bring him to realize that there is another side to the question. Two years ago the writer, starting with a belief that the write-down of plant to $1.00 value was unsound, made a study of the other side of the question, and was astonished at the many arguments which could be assembled in defense of the practice. Some of these will be mentioned later in this discussion.

A Favorable Case

LET us consider the case most favorable to the suggested practice of reduction in values. An oil company has lands and leases acquired and developed in the bygone days of higher costs and higher crude oil prices. Part of its properties, acquired at low cost and developed by the company itself, have been appraised on the basis of a crude price of 90c a barrel in 1930 with anticipated progressive increases to $1.35 over the productive life of the wells. Other properties have been purchased fully developed at peak prices. The company also has refineries and marketing plants and equipment representing an investment materially in excess of 1932 replacement costs.

Present prices of crude oil and gasoline will yield a profit before depreciation and depletion, but these two charges, if computed on the basis of book values, cut the profit almost to the vanishing point, or even change it to a net loss. Assuming that the lower price levels of 1932 are to be with us for a considerable number of years, with only a gradual rise, must this company look ahead to a dreary vista of net losses year after year? Is patient resignation to a cruel economic fate the only course open to the executives?

Surely under such conditions the com-

pany is, in justice, entitled to a new start with a clean slate. A careful revision of the value of its properties giving weight to their present replacement cost and their *present value as earning factors* as well as their resale or salvage value will provide such a starting point. Because this revision recognizes that the loss in *use value* has been incurred *in the past*, it should be charged off against accumulations or contributions of the past.

How Loss Is Absorbed

THE first cushion to absorb the loss is, of course, that surplus from revaluation which reflected the optimism of the late lamented era of prosperity. Then capital surplus or earned surplus is charged for the remainder of the write-down. If necessary, the required legal steps are taken to permit the transfer from capital stock account to capital surplus of a sufficient amount to absorb the loss. The enterprise then proceeds with its burden of fixed charges lightened to the point where net profits can be earned under existing conditions.

This procedure apparently follows out good accounting. Concerning value of fixed assets for balance sheet purposes, a recognized accounting authority says, "The value of an asset to a business is measured solely by the value of the *use*." Again, quoting from the same authority: "Perhaps the most trustworthy value is that which is established by capitalizing the use of the property to be valued." May this mean that the real value of fixed properties to a business is an amount which results in depreciation or depletion expense small enough to permit of profitable operations, assuming ordinary efficiency of management?

Revise Book Assets

IF PROPERTIES are valued on the basis of their use or earning power, the result in the case we are considering, would be an appraisal reflecting less than book values. "When such an appraisal has been approved by responsible officers or directors," says the accountant quoted above, "the book assets should be revised and the deficit deducted from capital or earned surplus, according to the circumstances." Presumably if the reduction resulted from insufficient depreciation charges of prior years, earned surplus should be charged. If, however, the loss results from changing price levels and economic conditions, and is in the nature of a capital loss, a charge against capital surplus might be justified.

In favor of the revaluation on the basis of present use value, with corresponding reduction of depreciation and depletion allowances to a point where that expense is not an unreasonable burden on current income, we may say that the loss of value which is written off has been sustained in the past. Let the past bury its dead. Future profits should not be applied interminably to the absorption of past losses. Today we write down inventories, and future cost of sales is correspondingly lightened; may not the same principle be applicable to fixed assets?

The stockholders and investing public have recognized the fact of decreased values and reflected their convictions in the lowered market price of securities. Incidentally, it is interesting to note that this loss in value of securities is a capital loss to the stockholder, which is added justification for the corporation's charge-off against capital.

Permanent Adjustment

ON THE other hand, careful thought must be given to the asset value revision, and it should be considered a permanent (or at least a long-time) adjustment. The principles governing it should not be abused or twisted to justify any frequent upward and downward revision of asset values with consequent inflation and deflation of depreciation and depletion to give a resultant net income of any desired amount. This is the type of manipulation to be expected from unscrupulous promoters, but not from responsible management. As a recognition of the loss of "use value" or earning power of assets, a loss which has reduced the capital of the business and should be absorbed by capital surplus and considered as an unfortunate incident of the past, the practice has much to recommend it. If it is resorted to as a temporary artifice to permit the showing of a predetermined net profit in a year of poor business, it should be condemned.

The merit of the proposal to write down asset values to $1.00 is doubtful, although there is more to be said for the procedure in the case of producing or prospective oil properties than in connection with refining and marketing plants and equipment.

Practice in the industry already sanctions the charging off (to expense) of intangible development cost of drilling wells. Aside from the element of salvage value (pitifully small under present conditions) there is no essential difference between the tangible items of derrick and rig, casing and tubing, and the intangible item of labor in erecting the derrick, drilling the hole, setting casing, or cementing. The costs of land (above the value of surface rights) and leases are in the same category.

Not Good Theory

BOTH tangible and intangible well costs are as surely capital asset items as are the architect's fees, steel, concrete, and labor that go into the erection of a building. The practice of charging off the intangible portion of well cost is a recognition of the particularly hazardous nature of the oil industry, but is not in accord with good accounting theory.

The true value of oil producing properties is based entirely on the crude and gas which will be produced, and it bears not the slightest relation to purchase price or cost of development. A 1,000 bbl. well may be brought in with an expenditure of $75,000 for drilling and no lease cost. The expenditure of $150,000 may result in a 100 bbl. well. Cost is not even a vague indication of value in either case.

Real Information

THESE conditions may justify the elimination of cost of leases and wells from the balance sheet. Certainly there is more real information in such an item as:

Oil producing properties (estimated recoverable oil reserves 2,500,000 bbl.; average daily production 1,500 bbl.) at nominal value..... $1.00

than in the customary statement:

Oil producing properties $750,000.00

Even so, however, the decision to carry the producing properties at a nominal $1.00 value does not warrant making the charge-off against *capital surplus*. So far as the reduction represents a real decrease in value resulting from subnormal economic conditions, there may be justification for such a charge on the grounds that there has been a real shrinkage which is a capital loss. Beyond this point, however, the charge-off is an anticipation of an expense. It is part of the cost of future operations, and as such should sooner or later end up in earned surplus.

Refinery Write-Downs

WITH respect to refinery and marketing plants and equipment, there is far less to be said in favor of writing down the cost to $1.00. The single strong affirmative argument in favor of the practice is that subsequent earnings are not burdened with charges for depreciation and depletion. This is precisely the point which the conservative accountant will probably hold most strongly against the procedure, inasmuch as he is constitutionally opposed to financial jugglery for the purpose of increasing the amount stated to be earnings. He is, of course, in favor of steps which will actually increase earnings, but he opposes the inflation of a figure measuring net income without in fact increasing income itself.

Practically all other arguments which the writer has found advanced for the

nominal value theory are defensive. Some of them are given in the following paragraphs.

The practice is likened to the carrying of patents, copyrights and goodwill at $1.00, which has long been countenanced in practice. The point is made that balance sheet values of fixed assets are usually merely historical, and as they are not accurate measures of value they may mislead readers who accept them as indicating present worth. Balance sheet values have no necessary relationship to going concern value, reproduction cost, fair market value, or scrap value. The true value of fixed assets to a going concern is best measured by the capitalization of earnings attributable to them, and the use of a $1.00 value puts the reader on notice to determine present values by this method or other means.

100 Percent Reserve

THE useful value of plant assets (say proponents of $1.00 valuation) is subject to fluctuation or even destruction due to obsolescence and other outside influences. The charge-off anticipates the worst that can happen to property values by eliminating them in advance of calamities. In effect, a 100 percent reserve for obsolescence and contingencies is set up; thereafter the fixed asset and net worth section of the balance sheet will not be further damaged by obsolescence, fires, tornadoes, or depressions. This is particularly advantageous in especially hazardous lines of business where sudden changes may materially affect production and sales, or where the threat of obsolescence is great.

It is argued that the write-down to $1.00 is the reverse of the principle of write-up to appraisal values, and the elimination of depreciation and depletion by one means is as justifiable as the increase in these charges by the other. In either case certain legal and technical requirements are met, and a new basis provided for future financial statements.

Allowances for depreciation and depletion are at best but estimates, it is pointed out. Estimates are based on judgment which is influenced by natural inclinations toward conservatism and caution or liberality and optimism, although good faith in either case may not be questioned. Honest differences in viewpoint may result in widely varying depreciation policies which will disturb comparison of earnings of parallel businesses. Is not a figure of earnings excluding such variable estimates more reliable for comparative purposes and less misleading to investors than one purporting to make full allowance for fixed charges without indication of the policy followed in determining the amount thereof?

Practice Lacks Support

NEVERTHELESS, in spite of these and a number of other arguments, the practice has not been accepted by the majority of accountants or business men. Regardless of the accounting entries, both the properties and their depreciation and depletion remain facts. The value of the assets and the amount of the expenses may not be known exactly, but the existence of the one and reality of the other cannot be questioned. If the expense incident to use of capital assets can be eliminated by charges to capital surplus, is it not equally desirable and permissible to establish a reserve out of capital surplus and charge all purchases of crude oil against it, thereby dispensing with another sizable and burdensome expense item?

Admittedly the accepted principles of balance sheet valuation do not give an exact picture of present values of plant and equipment. Find a more accurate method and the accounting profession will approve it. But to eliminate all method and substitute a question mark in the shape of a $1.00 value is to get further away from the objective rather than nearer to it. Despite inaccuracies, fixed asset figures stated in a balance sheet according to accepted accounting principles give a stockholder at least a general idea of extent and value of plants, whereas the $1.00 figure gives no indication whether investment in plants totals $100,000, $1,000,000, or $100,000,000.

Exchange Disapproves

UNFAVORABLE comment on the practice is by no means confined to accountants. The Listing Committee of the New York Stock Exchange expressed its disapproval in 1929. The Gold Dust Corporation, after showing its tangible and intangible fixed assets at $1.00 in its 1928 report, applied for listing of additional stock. The Listing Committee at that time took exception to the procedure, and according to the corporation's 1929 report to stockholders "pursuant to the special request of the Listing Committee, the plants of Gold Dust Corporation and its subsidiaries were revalued by the directors of your corporation and placed on the consolidated balance sheet at such new value."

It appears at present that many objections will have to be overcome, and more convincing arguments advanced in its favor before the nominal valuation of fixed assets is generally accepted as good practice by the accounting profession. The feeling commonly expressed is that the procedure tends to be misleading and may too easily be used to deceive investors into the purchase of stock by creating misapprehension as to real earning power.

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Geological Exploration in North Africa

HENRY DE CIZANCOURT recently reviewed the geological work done in French North Africa, in Morocco, Algeria and Tunisia. He states in a paper on this subject that, although no commercial production of any importance has been developed to date in French North Africa, there are many areas offering good promise. Detailed geological studies will be continued and further tests drilled in an attempt to solve some of the problems concerning the occurence of oil in North Africa. It is stated that wells drilled to date have been either too shallow, or their locations were poorly chosen. Even though such was the case, and though oil seepages are fairly numerous on the northern slope of the Atlas mountains, the geologist is apparently not too optimistic as to commercial oil possibilities of North Africa. Predominance of shale beds, absence of porous formations to serve as oil reservoirs and highly broken up character of the Atlas mountains are indicated as not conducive to commercial oil accumulations.

Only in Algeria, in the Tliouanet region, actual oil production has been developed, so far in entirely non-commercial quantities. From 1904 to 1931, inclusive, this region produced 163,000 bbl., reaching the peak in 1929 when 21,400 bbl. were produced (58.6 bbl. per day), and declining to 8,400 bbl. in 1931 (23 bbl. per day). Currently four companies are conducting petroleum research work in French North Africa:—Compagnie Française des Petrole (semi-Government concern), the French National Office of Liquid Combustibles (Government Agency), the Bureau of Researches in Morocco (Government Agency) and Financo (Belgian company).

Soviet's Unfortunate Cracking Experience

Severe Criticism in Russia of the Failure to Make Wider Use of Modern American Processes Brands Cracking Commission which Purchased British Equipment as Sabotagists.

ONE of the most encouraging signs in Russia is the free discussion now taking place of the difficulties which have been encountered. Mistakes frankly faced have a chance of prompt correction. It is true that this criticism very often takes the form of an allegation of sabotism but this euphemism may be necessary to secure acceptance.

Typical of this is an article appearing in "Za, Netennuyu Piatiletka" Number 2 of January 15, 1931 under the title "Sabotage in the Oil Industry" written by the Economist Eglit, one of the advisors of the Petroleum Division, Moscow.

In the translation of the article which follows we have suppressed the name of the British cracking equipment referred to by Mr. Eglit, since it is possible that the equipment in question may not have been properly used.

IT IS well known that the advent of cracking began soon after the great war and therefore immediately after the nationalization of the oil industry in Russia and the Soviets had all the opportunities to build up a national cracking industry along the lines of development of cracking in the United States and even independent of the United States.

We had this opportunity because of the early experiments with cracking of oil made in Baku. Participants of the early Kvitko experiments are still alive at Baku in the midst of us and one of the then young engineers of Azneft Baku has made experiments with semi-cracking in a plain kerosene still. A special testing plant of that kind was designed for the purpose and erected at Baku by the same engineer.

These blessed beginnings were passed on to a special "Cracking Commission" which was formed at the Azneft in Baku for the furthering and developing of cracking. This commission had soon enough buried all these early efforts as well as all subsequent attempts made in the direction to organize any form of Soviet cracking.

Alongside of these activities and even a little earlier, namely in 1921, a special commission constituted of the highest refining specialists and experts of Soviet Russia was formed in Moscow. For a number of years this commission conducted experiments and tests with shell still cracking. However, no practical results were attained owing to the fact that some of the members of the commission seem to have been very much against development of cracking in Soviet Russia, which is evidenced by the fact that they busied themselves mostly with the cracking system of Burton which soon became obsolete and was driven out by Dubbs, Cross and other processes. It was actually absurd to continue experimenting with a system which had long ago been rejected in the United States.

It seems that the main concern of this commission was to create the impression of doing something in the direction of cracking and they had the best justification for such an impression by the fact that the very highest names of Soviet Petroleum Technologists were all members of this commission. The aims of this commission were successfully attained up to 1924 when their prestige reached its climax and began to decline. Some of the leaders of the Communistic party and some of the prominent petroleum experts had come to realize that for the solution of the cracking problem of Soviet Russia it was necessary to order modern cracking equipment from abroad.

As a matter of fact the commission, which nominally continued to exist, also changed its point of view and began warmly to advocate ordering the best possible cracking equipment in the United States. This coincided with the trip of the Serebrovsky Commission to U. S. A. in 1924 and Mr. Serebrovsky began to negotiate a contract for cracking equipment with one of the leading manufacturers which, much to be regretted, did not materialize.

At this time several members of the cracking commission of Moscow entered upon a campaign to discredit American cracking equipment against British design of a —— type which in their opinion had all the advantage over the American process because it formed less coke in the process of operation and yielded a higher grade of fuel residue and last but not least it did not require the payment of any license fees for patents.

It must be stated that no commercial tests of any value were made with —— cracking units up to the time when the Soviets ordered these cracking units. No previous experiments are known to have been made with this equipment for the simple reason that no installations of this kind were known to be erected anywhere. It was evident that —— cracking equipment was not fit for Soviet Russia's first attempts to establish a cracking industry. However —— were awarded the order.

It seems that certain circles within the oil industry of Soviet Russia were reluctant to follow the experiences of the advanced industry of United States and these circles therefore decided to develop the cracking industry of Soviet Russia on their own initiative regardless of the heavy penalties involved for such experimenting.

Instead of taking the best and highest, which the capitalistic countries had evolved, it was evidently decided to give an impression of doing the right thing by making a lot of noise as if living up to "tempo" while in reality we had entered upon the road of slow progress of experimenting which is very costly. The step of accepting —— cracking was decidedly a retrogressive one as it set us far back behind the expected goal.

The reason given for the rejection of American cracking was rather poor. It was indicated that American methods of cracking entail a high yield of coke irrespective of the character of the input (gas oil or fuel oil). However, without checking up on it, we rejected American cracking and selected —— in spite of the fact that no tests whatsoever were made on this kind of equipment.

This indicates that certain circles within the Soviet Union must have been interested in obstructing our cracking progress. Attention was diverted from the real facts and they succeeded in their effort to set us back for a number of years. Cracking in Soviet Russia could not be successfully operated. We had fires, explosions and other accidents which

caused us to lose four years tinkering around with —— cracking units which were put into operation in 1929, and it must be admitted that the operation of these units is far from being satisfactory.

We lost time and we lost the opportunity of obtaining millions of dollars because we overlooked buying American cracking equipment in 1924. This would have enabled us to be in the markets of Europe with cracked gasoline of high quality at the right time which would have brought us the right prices prevailing at the time. Furthermore, we also lost our opportunity to prepare the ground for entering these markets which were ready to receive our gasoline mixtures of high anti-knock value. Cracking not only yields high grade gasoline, but also gasoline of high anti-knock rating and each system of cracking is bound to yield a different anti-knock rating. The higher the cracking temperature and the lower the pressure of the process, the better the anti-knock rating may be and best anti-knock value is obtained through the medium of vapor phase cracking where the temperature of cracking is high while the pressure is low. We would have done well to order one vapor phase cracking unit (from U. S. A.) to each liquid phase or vapor-liquid phase cracking unit erected in Soviet Russia. Our high quality gasoline blend would have beaten every competitor on the markets of Europe.

Our next mistake was the long delay incurred in rectifying the situation. Following the orders awarded to —— we had to take further steps to build up the cracking industry of Soviet Russia. What did three —— units amount to? When compared with our export potentialities the capacity of these three units amounted to a drop in the bucket. We should have bought 20 American cracking units in 1926 and double or even treble our subsequent orders during the following years. In doing so the Soviet cracking plants would have produced high grade cracking gasoline for which the Soviet treasury would have received millions of dollars.

The policy of the sabotagists in the oil industry on one hand and the hesitancy of the oil trusts on the other are to blame for the fact that between 1924 and 1928 not a single step was undertaken in the direction of building up a cracking industry in Soviet Russia. We were simply undecided upon the selection of the right type of equipment. Invariably the advice had been imparted to wait and to watch the success expected of the —— units and we waited four years.

Had we ordered American equipment at the right time our domestic plants would have been busy long ago with Bolshevist insistence to develop revolutionary tempos in building equipment after the same model. We were also handicapped in this direction and only in 1931 our domestic plants were building 20 cracking units.

We were also misled in the policy of geographical locations for our cracking industry. We were advised to build at the points of production, namely, at Baku and Grozni, while it would have been right to erect the plants nearer to the points of consumption. It is most rational to carry the cracking charge and to process the same at the point of consumption and to distribute the end product at distances not far from the refining points. Our cracking units are being erected far from the centers of consumption and our products are inferior through losses incurred in transport, evaporation and so on.

We were also wrong in our decision to crack fuel oil. The cracking of fuel is a very complicated task. The yield of coke is high and it crystallizes on the inner walls of the reaction chamber as well as in the inside of all other equipment and shortens the duration of the working cycle. Frequent stoppages are necessary for cleaning purposes during which the equipment has to be cooled and entails therefore higher expenditures for fuel. We had selected the most complicated of all cracking processes, while in the United States gas oil is cracked or a broad fraction of distillates between gasoline and residues, but very little of fuel oil, if any.

It is true we get in the end of our cracking process a higher grade fuel oil (favorable pour point) but we also get under the circumstances 25 to 30 percent of gasoline instead of 50 to 60 percent and in addition to it our fuel oil (high grade) contains coke which reduces considerably its quality.

Cracking is a costly enterprise and a dangerous one because of the high temperature of operation. The risk of fire and explosions is high and this all is hardly justified for the sake of obtaining a high grade of fuel oil. Furthermore Dubbs cracking yields up to 50 percent of gasoline and 20 percent of high grade fuel oil while the cracking product is being cracked to the end for gasoline, gas, and coke where fuel oil is only a by-product. Our system of cracking for the purpose of obtaining high grade fuel oil, simply means reversing the true purpose of the cracking process.

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Volunteer Committee Forecasts Decreased Consumption

A REPORT by the Volunteer Committee on Petroleum Economics submitted to Secretary Wilbur, Chairman of the Federal Oil Conservation Board, on the crude oil and motor fuel requirements in the United States from April 1, to December 31, was presented to the mid-year meeting of the American Petroleum Institute at Tulsa, Oklahoma, June 1. The report forecasts a decrease in total demand for United States motor fuel of 6.2 percent placing the figure for the nine months period at 337,000,000 bbl. of which domestic demand is estimated at 307,500,000 bbl. and export demand at 29,500,000 bbl. Decrease in domestic requirements is estimated at 5.4 percent against 14.1 percent decrease in export requirements.

In estimating motor fuel demand the committee took into account, beside numerous other factors, an indicated decrease in the number of automotive units in use amounting to 1,000,000 units. Unsatisfactory economic conditions account not only for the lower number of automobiles in use but also for an indicated decrease in the number of miles per unit travelled during 1932.

The downward trend in export demand is given as the result of decreased purchasing power in countries outside the United States, pressure of competition from other motor fuel producers, and agreements fixing source of supply. While these factors will continue to operate, the committee judged that export demand decrease will continue at a slightly less rapid rate. Imports are expected to decrease either as a result of an import tax or to compensate for the unusually heavy imports in the early months of 1932 made in an effort to anticipate the tax.

Committee suggested a reduction of stocks of motor fuel from 66,950,000 bbl. as of March 31 to 48,500,000 bbl. by December 31. Production of motor fuel, therefore, should be 309,850,000 bbl. Required domestic supply of crude is placed at 618,850,000 bbl., a decrease of 9.64 percent from the production during the last three quarters of 1931. Daily production of 2,225,000 bbl. is recommended.

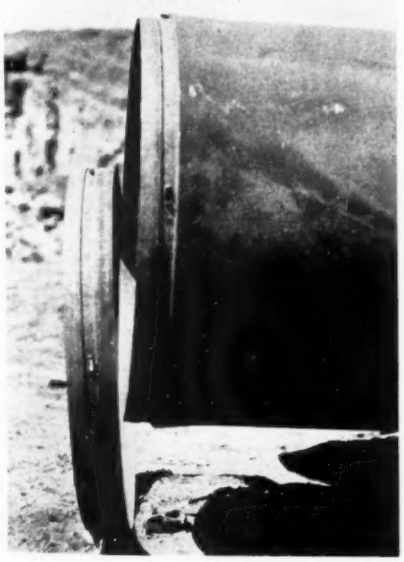
Cutting Costs in Pipe Line Construction

Unusual Attention is Being Directed Toward American Practice in Pipe Line Construction as a Result of the Huge Iraq Pipe Line Soon to be Started in Mosul. ***By Wallace A. Sawden***

THERE have been important changes in welded pipe line construction methods during the past year. Most have involved, either directly or indirectly, the reduction of construction costs and at the same time have aimed to improve the finished line or to facilitate its laying. Technical staffs of oil and gas transportation companies have been influential in moulding the trend in design; and since they must always keep in mind operation and maintenance of the complete line, they have naturally aimed toward better construction. Pipe specifications have been given their especial attention while improvements in joints and welding methods have been developed by manufacturers to meet highly competitive conditions.

Tendency in California at the present time is toward the use of lighter pipe with higher tensile strength. The 26 in. gas line running from Kettleman Hills Field to Long Beach has a wall thickness of only one-quarter inch. Gas will be fed into the high pressure end of this line at about 400 lb. per sq. in. and it can readily be seen that a much greater tensile strength is required in the steel than that of only a few years ago.

Grooved liners for large diameter, oxy-acetylene welded line.



All the major lines laid during the past year have used pipe with a minimum ultimate tensile strength of 60,000 lb. per sq. in. or more and an elastic limit of about half that amount. Such pipe has been made of 0.20–0.30 carbon steel with manganese, sulphur and phosphorus contents in amounts varying with the manufacturer's process. Latest specifications, however, have been boosted and some pipe is now being furnished with a higher carbon content giving a minimum ultimate tensile strength of from 70,000 to 90,000 lb. per sq. in. and an elastic limit of not less than 40,000 lb. per sq. in.

Thinner pipe that can thus be used with the high tensile steel naturally permits a saving in the amount of steel, together with a corresponding saving due to decreased weight in freight and other transportation costs. Cost per ton of steel is, of course, somewhat greater for the higher carbon alloy but this cost is more than offset by other economies.

The advantages of the very thin wall pipe are naturally not accepted unanimously and some claim the extra steel in the thicker pipe is well worth its extra cost. One factor considered is additional resistance to corrosion provided, with the argument that as corrosion penetrates into the pipe its action is slowed up. A half-inch thick pipe would, according to this reasoning, last considerably more than twice as long as a quarter-inch thick pipe. In contradiction to this is the opposite theory that corrosion is so far from uniform in its action that the said half-inch thick pipe would have a life much less than twice that of a quarter-inch thick pipe if the line were subjected to corrosive action.

Wrinkle type expansion joint on 26 in. pipe: tacked on left and gas welded on right.

Practically all lines now being laid, however, are coated with some material to prevent any corrosion attacking the metal. With such pipe coating applied, it would hardly seem necessary to provide an extra precaution against corrosion in the form of additional steel; and the contention that the thicker wall is an advantage in this respect would indicate a lack of confidence in the effectiveness of the pipe coating. Yet it has become an almost universal practice to apply some form of coating on the lines for the primary purpose of eliminating corrosion.

The traverse sag of the thin wall pipe is, of course, much more pronounced than that of pipe with greater thickness. On a test made by placing a piece of 26 in. pipe with a ¼ in. wall on supports near each end, the ovality was found to be 3/16 in. Another piece of 24 in. pipe with walls of only 3/16 in. thickness gave an ovality of nearly ½ in. This distortion has evidently had little effect on making up the joints and no precautions have been taken because of it in laying or back filling. Moreover, in large diameter pipe some reinforcing ring, primarily used to aid in stabbing, will generally be inserted in double bell types and this would overcome many difficulties that might arise if

the pipe should tend to take an oval form while resting on skids or dollies.

Speed in welding (which is a direct factor in cost) and savings in rod material have influenced design of joints now being widely used in the California lines. Both oxy-acetylene and electric arc methods of welding are popular and in several cases each kind has been used on designated sections of the one line. Close observation of operations has been made by engineers of pipe line companies and data are being compiled to aid in design of future lines. Pipe of the same specifications has been welded by both gas and arc methods but the details in joint design have been varied to fit the welding operation most satisfactorily.

In order to increase speed of oxy-acetylene welding and at the same time cut down on the amount of rod necessary for each joint, a process given the trade name of "Lindeweld" has been introduced and has been used to a considerable extent during the past months. This type of joint requires a special flame adjustment, a special rod and a particular welding technique. A butt welded joint made by this method has an angle of the bevel of about 60 deg. and cuts down welding space to a considerable extent. Due to a lessened pipe distortion secured by the method, the butting ends are also kept but $\frac{1}{8}$ in. apart. These factors give a very narrow weld on the outer perimeter of the pipe and present a saving in time, rod material and gas. In making the weld there is very little breakdown or melting of the pipe metal but tests have indicated that welds made in this manner have given satisfactory performance.

A factory made bend tacked ready for oxy-acetylene welding.

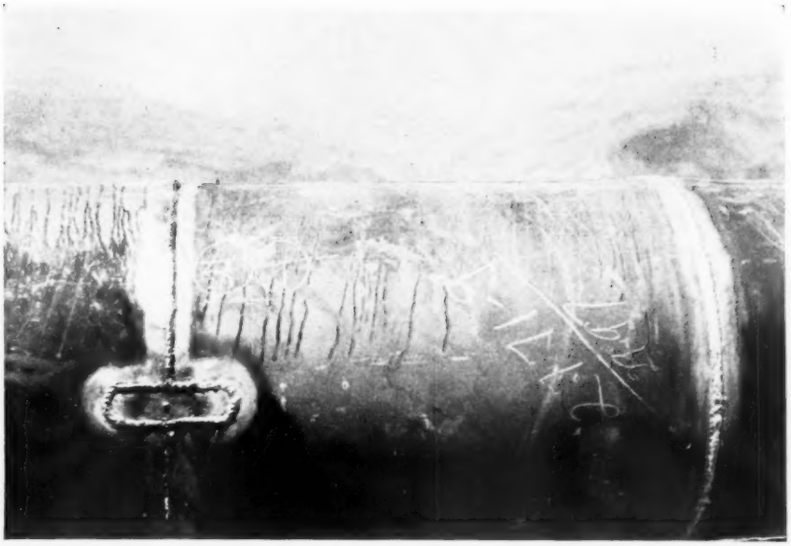
Liners are naturally desirable for larger sized pipe. The one designed for the gas welding process mentioned above has a dished effect which permits the fusion of the liner to the bottom of the weld and makes it an integral part of the joint. The liner is stream-lined on both sides with the least inside diameter corresponding to the inside diameter of the pipe line. Spacers or lugs are made by punching up a section of the thin part of the liner. They are $\frac{3}{32}$ of an in. in width and four in number. In an accompanying illustration can be seen the grooved liners used in a 26 in. pipe.

The Smith type joint which is being used to a considerable extent with electric arc welding is a double bell end joint with a chill ring that facilitates stabbing and aligning. The ring has a spacer or dam in the center to keep the ends at proper distance apart and to insure that the pipe is properly snugged up to its correct position. The 45 deg. bevel is used and the process is merely that of butt welding. This joint has evidently superseded the bell and spigot type made with a welding dam; and although it probably requires more rod material than the older type, it offers other advantages that offset this feature. Inside diameter of the chill ring must, of course, correspond with the inside diameter of the pipe and practice is to make ring thickness the same as pipe thickness.

Semi-automatic, oxy-acetylene welding torch that reduces the human element to a minimum.

Factory made bends have become popular for changing direction both vertically and horizontally. Illustration shows a bend of this type that has been tacked ready for gas welding. These bends are being made for five, ten, fifteen and twenty degree angles and thus provide combinations by means of which sharpness of the curve to be laid can be regulated. While bends are intended primarily to facilitate and speed up construction, they probably tend to make better jobs also.

Considering a 20 deg. bend illustrated, each end of a short length of pipe is cut at an angle of 10 deg. to the normal. This forms elliptical perimeters at the ends but provides sufficient material for making bells. The bell is then formed at each end and produces an end similar to the one on the straight pipe. So constructed, it has a circular perimeter in a plane which lies at an angle of 10 deg. from the cross



Coupon has been removed from this joint for testing and been replaced by piece of pipe.

sectional plane (at right angles with the longitudinal axis) of the pipe. Inside diameter of the bell corresponds, of course, with that of the straight pipe and makes the double bell joint in the same way as on straight sections, with provision for a liner or chill ring.

Expansion joints are being used to a considerable extent but more thought than formerly is given to their location in the line. Terrain conditions influence this and hilly country in which many of the recent lines have been laid in California has made their use particularly advisable. General practice with one gas company has been to place an expansion joint near the top of long hills. This provides for any contraction and aims to prevent buckling of the line in the lower sections. On lines that are comparatively straight—both horizontally and vertically—the same company places an expansion joint about every half mile. Extreme changes in weather do not, of course, have to be provided for and sharp, quick variations in temperature prevailing through a 24 hour period in some seasons of the year are taken care of while welding and laying the line.

The "wrinkle" type of expansion joint is widely used. Even it, however, has been changed during the past year although its outward appearance remains the same as shown in the illustration. It will be noted that the sleeve extending under the entire wrinkled portion has been omitted and that each end of the joint is now butt welded to the bell end of the pipe. The inside diameter of each end of the expansion joint is the same as that of the bell and thus forms the double bell joint made with liner or chill ring.

Oxy-acetylene and electric arc methods of welding are both being used extensively for pipe lines in California and each has its strong advocates. As mentioned above, one of the latest lines to be laid was constructed in part with arc welds and in part with gas welds. Speed attained by using the electric arc method, however, has been the means of developing the much faster oxy-acetylene method described above. Even the human equation has now been robbed of some of its influence in this gas-welding method by the very recent introduction of a semi-automatic torch which has been developed for use with the "Lindeweld" process.

This torch is shown in operation in an illustration accompanying this article. It is a two-flame blowpipe with an automatic gravity feed rod holder. Two runners support the apparatus and the two flames and rod holder are aligned and guided in the plane formed by the pipe joint. The upper flame preheats the rod to a cherry red and cuts down the amount of heat required in the welding flame besides preparing the rod for quicker melting by the main flame. The lower is the welding flame which prepares pipe metal for fusion with weld metal and actually melts the end of the rod in the puddle. One hand only is necessary for operating the device and this leaves the other one free to adjust the flame, change the rod or signal the turner. The rod is raised or lowered by means of a lifting device operated by a trigger on the blowpipe handle. This assists in starting the weld, permits passing over tack-welds and facilitates the work in many ways.

While there is considerable difference of opinion in regard to the value of field tests of the tensile strength of welds actually made in a line, such tests may at least have an influence in keeping the welder "on his toes." The welds constructed by either the arc or gas methods should equal or exceed in tensile strength the steel in the pipe when properly made. Random tests, taken without warning, will show to some extent the character of the welding work being done and will provide an assurance that the joints can be made as strong as the rest of the line. The completed line must, of course, be thoroughly tested for leaks before it is put into service and no amount of tensile strength testing will ever eliminate the necessity for such service tests.

Test car for determining tensile strength of a weld on the job.

Even in the matter of field tests for ultimate tensile strength of welds, developments have been made in the past year. One company supervising oxy-acetylene welding work has built a test car which gives the result at once and on the job. It previously had been the practice to cut a coupon from the joint and send it to a laboratory for testing. This necessitated a delay of a week or two before the strength of the weld was known and much poor work might have been done during that time.

The portable field tester being used on some of the lines recently laid in California is mounted on a light truck and consists of a cutting and welding outfit as well as testing machine for tensile strength. In using it, the inspector cuts a coupon of about 7½ in. by 1¼ in. from the weld at any joint he desires. This is put into the machine and force applied by hydraulic power actuated by a hand pump. Exact tensile strength is shown on the gauge (which can be seen in the illustration) and the coupon tested to destruction. If the weld shows satisfactory strength, a piece of the pipe is cut and fitted to the opening left by the coupon and is welded in. Such a test with the replaced piece is illustrated. This particular test was made on a short piece of pipe where greater hazard was likely.

Factory bend, bell-hole welded.

It has been the custom to cut coupons from each welder's work as often as the inspector deems necessary to keep the quality of the welding up to specifications. At the start of the job at least one coupon per day is taken from each welder's work and this can be decreased as the operation progresses. The inspector must use his judgment and he is soon able to determine the number of tests that are necessary to keep the welding up to standard.

Another method for field testing involves the use of a milling machine which is carried along the line and operated by two men. This machine is strapped on the pipe at any joint indicated by the inspector for testing and uses two cutting wheels to mill out a coupon. The coupon taken in this manner is usually but 3/16 in. wide and the edges can be kept more nearly straight than with a cutting torch. It is particularly advantageous for arc welding work.

Since joint maintenance should be reduced to a minimum in welded line, it is evident that improvements in design and making of joints have been important factors in pipe line construction. Such joints, when properly welded, should require no more repairs than the rest of the line and economies in construction obtained by facilitating the laying of the line should be accompanied by economies in maintenance secured by a better line. Leakage test made before the line is put into service should, however, be made with care. Maximum pressure at which the line will be operated should not be exceeded to any great extent in making the test; excessive pressures may cause leaks that would never occur under actual working conditions.

It must be remembered that the newest in joints cannot always be used and that ingenuity in welding technique is still necessary. Many lines being laid in and around Los Angeles are requiring the greatest skill in cutting and welding to overcome difficulties caused by crossings under highways, railroads and electric lines, by other pipe lines that must be passed either below or above, or by obstacles that must be passed around.

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Consolidation Marks Jersey Standard's 1931 Balance Sheet

THE 1931 balance sheet and income statement of Standard Oil Company (New Jersey) are not strictly comparable with those reported for 1930 and prior years because a number of subsidiaries formerly treated in the accounts as affiliates have been brought into the consolidated statements. This marks completion of a several years' program working toward consolidation of practically all of the component parts of this leading oil enterprise of the world.

Thus the increase shown in total balance sheet assets (less retirement reserves) from $1,770,993,803 to $1,919,010,367 was in large part due to the more complete consolidation of accounts rather than to the addition of new assets to the system. The gross plant investment was increased by $426,727,171, and of this amount, $393,556,290 represented the plant investment of companies not previously consolidated. The balance of $33,170,881 represented the net additional investment in properties, plant and equipment by companies heretofore consolidated. Most of the net credit to surplus account for the year, which amounted to $85,741,065, was due to consolidation of subsidiaries (and their subsidiaries) not heretofore consolidated, and represented the net value of such companies as of January 1, 1931, in excess of the investment therein as carried on the books.

The increase in total operating income (before interest and reserves) from $150,063,220 to $164,224,366 was, of course, due to the consolidation of additional subsidiary revenues and expenses, and was more than offset by the resultant increase in reserve charges, from $84,221,403 to $109,823,976, so that net profit for the period (exclusive of inventory loss) was $45,039,845 compared with $56,938,670 shown for 1930. Last year's net, however, was further reduced by inventory adjustment of $24,421,834, and after deduction of minority interests the final net to stock was $8,704,758 compared with $42,150,662 in 1930. After payment of $51,205,436 in dividends the deficit transferred to surplus was $42,500,678 as against a 1930 deficit to surplus of $8,779,024 and an addition to surplus in 1929 of $74,393,090.

On a per share basis the final reported net profit was equal to 34 cents on 25,735,468 shares, compared with $1.65 a share in 1930 and $4.75 in 1929. The inventory loss was equal to 95 cents a share and the reserve charges to $4.27 a share, indicating total bookkeeping deductions of $5.22 a share and net earnings on a cash basis of $5.56 a share. These large cash earnings explain why the company could continue the $2 dividend basis, spend $33,000,000 in new plant and maintain a sufficiently strong financial position to warrant the purchase of Pan American's foreign properties on a basis involving a cash payment of $50,000,000.

At the close of 1931 total current assets were $671,154,622, including cash and marketable securities totalling $279,801,020, and total current liabilities were only $85,916,259, indicating a current ratio of 7.8-to-1. Net working capital was equal to $22.80 per share and after deduction of the entire funded debt of $173,442,017 would have left a theoretical balance of liquid assets equal to $16 a share.

Empire Policy in Relation to Trinidad

Legislative Council Committee of Trinidad Reports on the Advantage to Great Britain of Preferential Treatment of Trinidad Oil in British Market Based on Past Exports.

WITH a view to suggesting measures to be adopted in the United Kingdom of Great Britain for various Empire products by means of tariff preferences, the Government of Trinidad has recently appointed a Committee of members of the Legislative Council to investigate the position and prepare a statement for the British Government.

The report of this Committee has been published as a Council Paper and will be submitted to the British Secretary of State for the Colonies, the declared policy of whose Government is the encouragement of Empire trade—a policy which is being adopted at present by Governments practically the world over.

Dealing with the question of mineral oils in Trinidad, it is pointed out in the report that while Trinidad is responsible for one-third of the total amount of petroleum oil produced within the Empire, and is the only part of the Empire which has an appreciable surplus export, it is in no way responsible for the world overproduction. And although the Colony had regulated its petroleum industry by laws designed to ensure reasonable methods of development and extraction, it had to meet in world markets, especially

Petroleum Exports from Trinidad 1931

Year	Quantity Barrels	Value Dollars
1930	7,678,807	2,790,695
1931	8,964,304	1,949,455

that of Great Britain, the competition of products resulting from unreasonable overproduction which was being disposed of at unremunerative prices.

It is claimed that if the whole of Trinidad's production were available for export to Great Britain, approximately one-seventh of the requirements of that country would be met, and a greater proportion, if further development of the oil industry were encouraged.

The Committee pointed out that the entire production of the British Empire, excluding "exportable surplus," amounted to two percent of the total world's production, and as Great Britain consumed about four percent of the total world's production, she was therefore in a position to assimilate a much greater quantity from her Empire sources.

In representing its views as to why Great Britain should grant preference to its Empire produced-and-refined petroleum products, the Committee recalled Sir Thomas Holland's contention, when reporting on the oil industry of Trinidad, that "the conditions under which the industry operated in Trinidad were, in a great measure, the outcome of over-riding Imperial considerations."

It was also found that the industry in Trinidad as a whole was, and had been for some years, working at a loss but that any picture of its conditions was liable to be obscured by the admitted success of a few operators. Crude oil which in 1927 was worth $1.20 a barrel was now selling for less than 50 cents.

Appended to the Committee's report is a memorial by the majority of the major operators in Trinidad, supporting the contentions outlined above, and urging that any losses to the British revenue by reason of the suggested preferences would be largely offset by the advantages accruing from the establishment of additional refineries in Great Britain.

It is further suggested in this memoria that the 1,142,857 bbl. of petrol which is at present shipped annually from Trinidad in vessels of American register would, if shipped to Great Britain, be transported in British bottoms, thus representing a gain in income to Great Britain of £85,000 ($408,000) per annum, which sum would increase with establishment of additional refineries within the British Empire.

Trinidad Petroleum Exports 1932

(Barrels of 42 U. S. gallons)

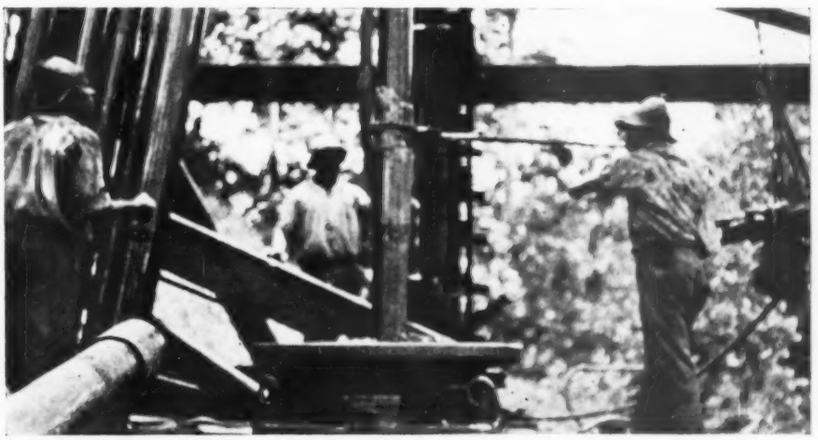
Product	January	February	March	April
Fuel Oil	630,839	530,118	462,689	312,811
Kerosene	1,818	4,648	3,189	4,136
Motor Spirit	159,346	164,061	164,230	134,851
Crude Oil	268,699	287,401	166,295	366,429
Lubricating Oil	15	40	24	35
Road Oil	46	1,441	1,184	560
	1,060,763	987,709	797,621	818,822

Basing their arguments on the fact that the only taxation on petroleum products in the United Kingdom was the duty of 16 cents per gallon on gasoline, the Committee recommended that:—

(1) Gasoline which was both produced and refined within the Empire should be given a preference of one-third that amount.
(2) Gasoline produced or refined within the Empire should receive one-sixth of that amount, and
(3) Similar preferences should be granted to crude petroleum, as well as on kerosene and other petroleum products.

By way of giving an idea of the oil

Drawing out a string at Apex field, Trinidad.



potentialities, past, present and future, of Trinidad which occupies the tenth place amongst the world producers, it might be apropos to state here that the total output of Trinidad oil from the inception of the industry to the end of 1931 (approximately 25 years) was 74,033,008 bbl., 40,000,000 bbl. (or 64 percent) of which were produced during the past five years. Of this amount 56,497,447 bbl. were refined and the total quantity of crude oil and refined oil exported up to the end of 1931 was 58,083,242 bbl.

At present, owing to low prices ruling for the product, many of the companies in Trinidad have reduced their output and curtailed development, but it is expected that the current year's production will be far in excess of last year's which amounted to 9,743,501 bbl.

With regard to Trinidad's future oil output, there are years of potential production only awaiting more favorable marketing conditions, and there yet remains in the existing fields possibilities of production below the present known horizons. There seems no reason to fear any marked production decline for a considerable period.

During 1931 the Mines Department of Trinidad reported that a further fall in prices resulted in curtailment of operations by some of the companies and footage drilled in 1931 amounted to 218,642 ft. against 372,530 ft. drilled in 1930. In spite of this curtailment of drilling, attention directed to old wells and increased activity in the areas controlled by a few companies succeeded in increasing production by 324,000 bbl. compared with 1930.

Exports suffered from the general decline in world oil prices as shown in the accompanying table.

Little new construction work was undertaken but geophysical prospecting methods were used for the first time in Trinidad.

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Venezuelan Comment on U. S. Import Tax

Minister of Industry Reports on 1931 Developments, Revision of Gas Tax Law, Discovery of Cumarebo Field, and Opposition to U. S. Oil Import Tax.

CARACAS, VENEZUELA

MINISTER of Industry (Fomento) has just presented his annual report to the national Congress, now in session, and as will be perceived from the extracts from it, printed below, there is lively interest in the probable imposition of an American import tax on South American oil. The major producers and exporters of Venezuelan oil are the Venezuela Gulf Oil Company, the Lago Petroleum Corporation and the three companies of the Royal Dutch-Shell interest—The Caribbean Petroleum Company, the Venezuelan Oil Concessions and the Colon Development Company.

Of the total production during the year 1931, amounting to 120,343,104 bbl., the companies named produced 115,004,540 bbl. and of this amount these companies shipped out of the country, to the refineries at Curacao and Aruba and to other foreign destinations, no less than 110,308,016 bbl. Moreover, the Standard Oil Company of Venezuela (Standard of N. J.), whose production for 1931 was in excess of 3,500,000 bbl., exported more than 3,100,000 bbl., and will shortly become a much larger producer.

It is obvious, therefore, that the question of an American import tax would arouse especial interest in this country. In this connection, the recent acquisition of the Pan-American, with its big local producer, the Lago Company, by the Standard of New Jersey, is viewed naturally as a move on the part of the latter to escape payment of duty on imported oil by switching its exports, in whole or in part, from American to Venezuelan production.

Most interesting of the developments in the Venezuelan field during the past year, is the discovery and operation, by the Standard Oil Company of Venezuela, of the Cumarebo field, in the State of Falcón. The first well, "Cumarebo No. 1", began to flow at a depth of but 627 ft., with an initial production of 726 bbl. daily.

The oil is of 48 gravity, A. P. I., the highest gravity oil yet discovered in this country. The new field is being developed by the Standard jointly with the North Venezuelan Petroleum Company, under contract, and the latter company will shortly transfer, it is expected, some 10,000 hectares to the Standard interest.

By December, 1931, five completed wells had been drilled, all producers, at depths varying between 608 ft. and 1,864 ft. and with initial production between 177 and 858 bbl. daily. Two more wells were being drilled at the close of the year, in addition to those above enumerated, and many locations had been demarked for future drilling. Five strata of oil sands have been found in the formation, pertaining to the Miocene period.

This new field is being actively developed, and the construction of camps, warehouses, oil storages, pipe lines, hospital and gas conservation plants is being vigorously pushed. Shipment of oil from this field was anticipated for a date early in the present year.

Extracts from the Minister of Industry's annual report furnish an excellent picture of events affecting the oil industry in Venezuela in recent months.

THE year 1931 has been especially critical for the petroleum industry, as it has in general for other activities of the financial world. The decline of prices, due to the excessive production in relation to demand, has been accelerated by the invasion of Russian oils in important markets. Although the figures of export of that country for the first nine months of 1930, compared with the figures for 1931, exhibit an increase of 172,773 tons in the latter year, it was not this relatively small excess—according to authoritative opinions—which chiefly upset European markets, but the fact that the Soviets have extended their sales throughout all western Europe, competing with the established sellers, more than sufficient to supply the existing demand.

The report then states that while diminution of production to or below market requirements is a logical remedy this should be put into effect by taking into

account productive capacity of the various countries, and not arbitrarily as it was done during the past year.

PETROLEUM producers in the States of Kansas, Oklahoma and Texas have aroused a general controversy in the United States by their effort to obtain from the American Congress the imposition of a tax upon petroleum imported from South America, alleging the lower cost of the latter, with respect to the national crude, in the market made by the Atlantic coast States, and claiming moreover that every shipment of foreign petroleum imported replaces an equal amount of the national product.

In order that an imported product may compete successfully with a national one, it must possess the same conditions, that is to say—supply the like needs, and the quality of the petroleum imported into the United States, very different from that which is there obtained, only satisfies a demand which the American product cannot supply without destroying the economic equilibrium of the industry in that country.

South American petroleum yields, in general, comparatively small quantities of gasoline, supplying in exchange abundant amounts of fuel oil and asphalt, substances of large consumption in the Atlantic coast States. If it be sought to satisfy this consumption with fuel oil and asphalt produced from the crude of the country (petroleum which yields from 45 percent to 60 percent gasoline), there would necessarily be thrown on the market something like 945,000,000 bbl. excess of gasoline, which, bringing with it the inevitable depreciation in price of a sub-product which represents two thirds part of the profit in the petroleum industry, would effect the ruin of the enterprises engaged in it.

On the other hand, if the measure to tax imported petroleum be recommended for the purpose of relieving the present crisis in that country, then in accordance with the judgment of authoritative persons, among them the President of the American Petroleum Institute, "a tax would only relieve the situation temporarily."

In point of fact, if it be taken into account that the American fields, under full exploitation, are capable of producing three times the quantity required for consumption, one can understand the grave danger which would result as a consequence of the increase of price, since the fictitious benefit which the prohibitive tax upon imports would bring about would irresistibly increase exploitation, provoking a super-production which must finally lead to quotations possibly even lower than those at present, and resulting in ruin to all enterprises incapable of withstanding the crisis and which, allured by the attractive initial prices, would have engaged in extensive exploitation, and weakening with serious losses such as should succeed in withstanding it—losses which could then only be recovered after the lapse of a long period of time.

Venezuelan Fields in Production at Beginning of 1932

Companies	Fields	District and State
Venezuelan Oil Concessions	Lagunillas	Bolivar, Zulia
Lago Petroleum Corporation	Punta Benitez	Bolivar, Zulia
and	La Rosa	Bolivar, Zulia
Venezuela Gulf Oil Company	Ambrosio	Bolivar, Zulia
Venezuelan Oil Concessions	La Concepción	Maracaibo, Zulia
Venezuelan Oil Concessions	La Paz	Maracaibo, Zulia
Colón Development Company	Tarra	Colón, Zulia
Colón Development Company	Los Manueles	Colón, Zulia
The Caribbean Petroleum Co.	Mene Grande	Sucre, Zulia
British Controlled Oilfields	El Mene	Falcón, Buchivacoa
British Controlled Oilfields	Media	Falcón, Buchivacoa
British Controlled Oilfields	Hombre Pintado*	Falcón, Buchivacoa
Tocuyo Oilfields of Venezuela	El Mene	Falcón, Acosta
North Venezuelan Petroleum Co.	Cumarebo**	Falcón, Zamora
Standard Oil Co. of Venezuela	Quiriquire	Monagas, Piar

* The Standard Oil Co. of Venezuela transferred management of the Hombre Pintado field to the British Controlled Oilfields, Ltd.
** Standard Oil Co. of Venezuela.

THE generality of the petroleum exploitation companies have been availing themselves in different ways of a part of the natural gas produced from their wells, being obliged to satisfy, consequently the taxes prescribed by our Hydrocarbon laws on the quantities of gas exploited. To this end, gas exploited has been considered, for the purpose of levying the corresponding tax, that quantity of this fluid:—

1. From which a salable product may be extracted and is extracted.
2. For which a cash value is obtained directly, or indirectly by substitution for another product which has recognized commercial value.

In the first case the natural gas is found utilized in plants for the extraction of natural gasoline; in the second, are included the natural gas sold and that used for fuel. The excess of gas discharged from the formation, not availed of in any of the ways above noted, has been considered by the Ministry of Industry as not exploited. Of this excess, a part is recompressed to the formation to stimulate the flow of oil and conserve the life of the well; the remainder, deemed as non-exploitable by reason of superior force, is consumed in suitable burners to prevent its free escape to the atmosphere.

The report reviews the discussion revolving around the fact that companies whose exploitation tax is fixed at two bolivars per ton receive no discount for the dry gas which issues from the absorption plant after extraction of gasoline, who therefore pay for the gas just as it issues from the sub-soil while companies whose contract stipulates that the exploitation tax shall consist of 10 percent of the commercial value of the mineral at Venezuelan port of shipment pay tax only on the price of natural gas or gasoline extracted therefrom. The latter companies therefore pay tax only on the gasoline extracted from the natural gas in the absorption plant and which when utilized as fuel has a price arbitrarily fixed as equal to 30 liters of gasoline per ton of natural gas for the purpose of taxation.

The report then describes the revision in the bases of valuation conducted by the General Technical Inspectorship of Hydrocarbons last December, which resulted in a more just and reasonable point of view.

In accordance with the new technical bases, the commercial value of a specific quantity of natural gas is that of the quantity of crude petroleum whose thermal hourly energy, under like conditions of combustion, would be identical with that which the said specific quantity of gas can develop.

The ton of gas is valued in this manner at approximately 17 bolivars, instead of 1.70 bolivars as formerly estimated, and the tax of 10 percent pertaining to the Treasury, at 1.70 bolivars, instead of 0.17.

INCLUDED with the Minister of Industry's report is the report of the Director of the Bureau of Mines stating that during 1931 exploitation of petroleum amounted to 17,191,873 metric tons against 20,153,913 tons in 1920 and 19,844,936 tons in 1929. The Director's report accounts for the decreased production as the result of unfavorable conditions prevailing in world markets, especially in North America.

During the year the Bureau of Mines considered 316 plans of parcels selected for exploitation of which 307 were reported favorably and 9 disapproved and returned. In addition to many other petitions, group plans, and requests for tax rebates, the Bureau considered the following:

	Reported favorably	Disapproved and returned
Petitions for constructing pipe lines	1	2
Petitions relative to establishments of gasoline storage	1	3
Petitions for constructions of railways	..	2
Petitions for establishment of refineries	1	1
Petitions for establishment of electric plants	1	..
Petitions relative to installation of lines, tanks and pumps	1	1
Petitions for installations for unloading, transport and distribution of gasoline	1	..

▼

THERE is a report that the Bolivian and Argentine Governments are negotiating to construct a pipe line 300 miles long to carry Bolivian crude oil into Argentina.

Liquefied Petroleum Gas Industry's Growing Importance

A Survey of the Status and Limitations of an Industry whose Growth During the Past Three Years has been Phenomenal. Prospects of an Export Market. *By M. David Gould*

ANY industry which was able to show an increase in sales of 58 percent in 1931 over 1930, after having increased 80 percent in 1930 over 1929, would seem to deserve attention; all the more when it appears that the greatest amount ever marketed in any one year was only about one-half of one percent of the theoretically available supply, and that it is serving some eight percent of its maximum theoretical market.

This is the situation of the liquefied gas industry, whose amazing growth in recent years is shown by the accompanying figures. On the other hand, there are definite restrictive factors at work which must be taken into account in any survey of the industry.

First to dispose of certain technicalities. The gases in question are principally propane and butane, which are intermediate both in chemical composition and in physical properties between natural gas (methane and ethane) and gasoline (pentane, hexane, etc.). The two lowest members of the series, methane and ethane, are gases at ordinary temperatures and pressures and hard to liquefy; propane, the next "higher" member, is a gas at ordinary temperatures and pressures, but liquefies at 44 deg. Fahr. below zero at atmospheric pressure and much more easily at high pressures. Butane, the next member, liquefies at about the freezing point of water at atmospheric pressure, and still more readily when compressed. Pentane is a liquid up to 67 deg. Fahr., and is one of the lighter gasoline fractions; on the other hand, it gives off vapor so easily that it can be used in some systems as a source of gas.

The value of these three substances lies in their high heating value as fuel. Manufactured gas has a heating value of about 550 B.T.U.'s per cubic foot; natural gas about 1100; propane has about 2500 and butane about 3250 to the cubic foot. When the two latter are used, therefore, in a pure state, they furnish an unusually high heating value per cubic foot; or they can be mixed with enough air to decrease their heating value to one-fifth or one-sixth which is about that of manufactured gas.

IT IS estimated that about 13,000,000 to 15,000,000 gallons of propane and butane are produced daily in natural gasoline plants, as a by-product of the separation of gasoline from natural gas. Last year's record sales of liquefied gases represented about two days' production. The rest either remained in the natural gasoline, which can hold about 10½ percent of butane and normally does contain up to about five percent; or was burned as fuel in field and refinery operations, a low-value form of utilization.

Even taking only those plants which are at present fully equipped to separate propane cleanly from butane and from other gases, it is estimated that 275,000,000 gallons a year could be made readily available, or nearly 10 times last year's record marketed production.

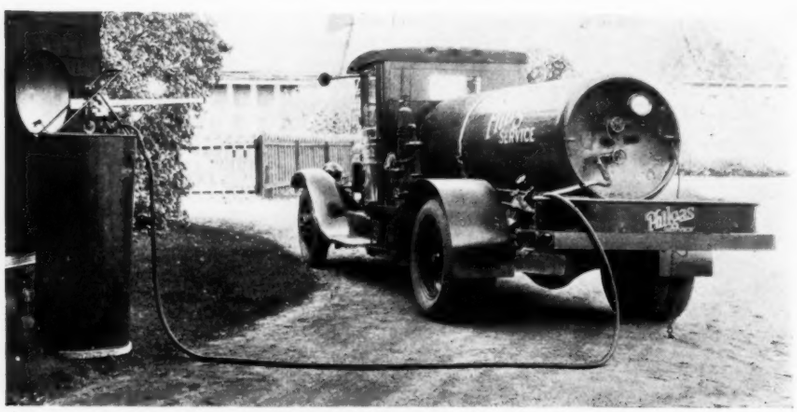
An additional vast supply is theoretically available from refinery still gases, particularly those using cracking processes. So far however, only the Standard Oil Company of Indiana's Whiting, Ind. plant is known to be marketing these gases commercially. They are sold as a "slop" or mixture of propane and butane to industrial customers. The Atlantic Refining Company is understood to have completed installation of separating apparatus for similar purposes.

Theoretically, the maximum field for the sale of liquefied gases for domestic consumption in cooking and hot-water heating is indicated by the fact that there are 13,000,000 families in rural or suburban areas out of reach of manufactured or natural gas mains.

In practice, there are certain limitations. First, where the density of population is such that it pays to build a gas manufacturing and distributing system, or extend a branch of a natural gas line, the convenience and economy is such that no other fuel can compete, under present conditions, for the domestic business. As density of population increases, therefore, locally and nationally, borderline areas formerly served by liquefied gases are relinquished with practically no struggle to public utility companies.

A second limitation is that of purchasing power, at the present time aggravated by general business conditions. The consumer must put up from $35 to $50 for installing the gas cabinet, and purchase a suitable range which may cost $80 to $100 or more additional. Once installed, the cost of bottled gas service averages about $4 a month, based on an average con-

One method of supplying liquefied petroleum gas to domestic consumers.



sumption of 400 pounds of propane a year at 12 cents a pound.

Third, selling, transportation and delivery costs are of basic importance in determining the profitableness of bottled gas business. Where population is too widely scattered, there is no profit in selling at any cost within reason. Mere cost of production of propane at the plant, which will vary widely according to bookkeeping methods used, may be as little as one cent a pound, and the retail price 12 cents a pound, yet the spread will not be sufficient to make it profitable to look for business in every out-of-the-way corner.

Selling costs, transportation costs (using special tank cars and carrying a railroad freight rate somewhat above that of gasoline), the variable element of trucking cost for the cylinders, overhead and carrying costs on the investment which averages $100 a customer, all rise sharply per unit sold as density of population decreases, and thus limit the possible area of sales.

In effect, therefore, the bottled gas business makes its home in a moving zone between the areas where population is too thin to support it, and areas where population is so dense as to invite unbeatable competition from regular public utility companies. This involves a certain turnover of customers from year to year. At the present time, the limitations of purchasing power are perhaps a more immediate restrictive factor.

Methods of supplying liquefied gases direct to domestic consumers in cylinders are far from standardized. One cylinder at a time may be in use on the customer's premises, and kept filled by periodic visits from the distributing company's truck; or two cylinders may be used, one for supply and the second for reserve. The second cylinder is connected to the supply system when the first cylinder is exhausted, after which the empty cylinder is removed and replaced by a fresh cylinder which then acts as a reserve.

The one-cylinder system requires a smaller investment in cylinders, but an additional investment in bulk stations and possibly higher trucking cost per unit sold because of incomplete truck loads.

The gas served may be pure propane, mixed propane and butane, pure butane, or pure pentane, each of which has different physical and combustion properties. The relation of liquefied gas to the gas as burned depends on the volatility and therefore on the constitution of the gas, and may be summarized as follows:

Pure propane—self-vaporizing
Mixed propane and butane—separate vaporizer necessary
Pure butane—vaporized at the burner
Pentane—carbureted, mixed with air before reaching burner

Unloading liquefied petroleum gas from a tank car specially constructed to comply with government specifications.

The Union Carbide and Carbon Company, parent company of the Carbide and Carbon Chemicals Corp., was one of the pioneers in the activity of the past 10 years in this field, and is estimated to supply some 55,000 out of the total 150,000 domestic consumers of bottled gases. It is regarded as the only one having true national distribution.

The Standard Oil Company of California has some 25,000–30,000 customers; Phillips Petroleum (through Philgas Company) has 25,000 in the Middle and South West and in the East; Shell Union has some 12,000, Skelly under 10,000, and Delco Light (subsidiary of General Motors Corp.) possibly 5,000 customers. No other company is believed to have as many as 5,000 customers, and these six together supply some 90 percent of the demand. There are altogether some 65 distributors supplying bottled gases, some of them buying from the companies above named or from other natural gasoline producers.

The 28,502,819 gallons of liquefied gases marketed last year went to domestic consumers in the proportion of 53.7 percent or 15,294,648 gallons. Gas manufacturing, including the enrichment of manufactured gases, took 21.7 percent or 6,184,655 gallons, and industry and miscellaneous took 24.6 percent or 7,023,516 gallons.

In addition to enriching manufactured gas, liquefied gas plants have been installed as an auxiliary to manufactured gas plants, to help carry unusually heavy peak loads of short duration. Under such circumstances it does not pay the gas company to install the additional equipment necessary to meet the peak demand in the usual way, as it will be in operation perhaps only three or four days a year. In Louisville, Ky., for example, a liquefied gas plant was installed at a cost of some $20,000 to meet such winter peaks, which is estimated to have rendered unnecessary the investment of about $200,000 in additional equipment; this city was originally supplied with manufactured gas, but now uses mixed natural and artificial gas for base-loads, with liquefied gas for a few days a year of exceptionally cold weather. This type of liquefied gas business, however, is not a great contributor to total sales, because of the specially acute peak load conditions required to warrant it.

Although direct comparisons are not possible because of inadequate statistical data, industrial uses of butane contributed substantially to the increase in sales last year. Automotive and other metalworking plants, fruit warehouses, and a variety of other industrial consumers desiring a flexible supply of high heat-value fuel, capable of close regulation, and requiring a minimum capital investment, have been turning to the use of liquefied gases in competition with industrial piped gas, fuel oil, coal and electricity.

The possibilities of the export trade in liquefied gases are still being explored on a tentative basis. Shell has constructed a special tanker, AGNITA, to stand up under the high pressures of liquefied gases

(ranging up to 250 pounds against 11–25 pounds for most volatile natural gasolines), described in WORLD PETROLEUM of May, 1931. The AGNITA recently shipped from a Gulf port to Europe. The liquefied gases, it is understood, are used by European refiners to blend with winter gasoline to give it greater volatility. Most gasoline shipped from this country is a finished product, however, and the difference in seasonal requirements is taken care of by varying the specifications at the American end.

Marketed Liquefied Petroleum Gas Production

Year	Gallons
1922	222,642
1923	276,863
1924	376,488
1925	403,674
1926	465,085
1927	1,091,005
1928	4,522,899
1929	9,930,964
1930	18,017,347
1931	28,502,819

Exports of bottled gas for domestic purposes are subject to all the restrictions of utility competition and purchasing power mentioned above, the latter factor being of special importance. Phillips ships from 3,000 to 5,000 lbs. a month of bottled gases to Bermuda, and has made trial shipments to England and Germany. From time to time a few cylinders are shipped abroad to industrial customers. By and large, however, the surface has not even been scratched in this field.

An interesting indication of the trend toward the development of the liquefied petroleum gas industry outside the United States is furnished by the formation of a company presently underway to supply domestic fuel to the city of Maracaibo, Venezuela, from a butane-air gas plant. Organizers of the company assume that at least 2,000 householders out of the 13,815 residing in Maracaibo will avail themselves of this service. A great source of supply exists in the plants about Maracaibo erected to extract gasoline from natural gas; butane which is at present lost to the atmosphere can be purchased direct or obtained by the installation of rectifying units for the separation of butane from the natural gas.

The most spectacular development in the liquefied petroleum gas industry in recent years has not been in the bottled gas division, but rather in the development of a new type of gas utility in the butane-air plant, serving a small community from a central station, through a distributing system like that of an ordinary gas company. The main difference is that the generating plant of the ordinary gas company, representing a large capital investment and operating by processing low-cost raw materials (coal, gas oil), is replaced by a mixing plant involving a very small capital investment but using with a minimum of processing a high-heat value fuel which is already in gaseous form. Because of low overhead cost, it is possible to install such systems in towns which are too small to support a manufactured gas plant. Otherwise, the enterprise is an ordinary utility requiring a franchise and subject to Commission jurisdiction.

It is to be noticed, however, that the distribution system is the same as in the ordinary gas company; the saving in capital investment is made entirely in the generating plant. Cost of the distributing system in the typical manufactured gas company is about 30–42 percent of the total investment; in the butane-air plants it may be 70 to 80 percent.

Consequently the factors determining failure or success in the installation of new butane-air systems are apt to be determined by the relation between investment cost per 100 ft. of distributing main, revenues and overhead and operating costs per 100 ft. In other words, where the cost of laying mains is too high, because of soil conditions, town layout, etc., excessive investment in the distributing system may counterbalance the saving in the mixing plant, and result in a situation where no profit can be made except on the basis of rates which too few consumers can afford to pay. There is a town in New Hampshire, for instance, built on solid pre-Cambrian granite, in which the cost of laying mains is supposed to be about $5 a foot compared with usual practice around 40 cents; it has broken several successive small companies to try to overcome this handicap.

Where gross revenue per 100 ft. is too

(Continued on page 268)

Producers of Liquefied Petroleum Gases
(U. S. Bureau of Mines)

Company	Trade Name	When Started
Carbide and Carbon Chemicals Corp.	Pyrofax	1924
Carter Oil Co.	.....	1931
Empire Oil and Refining Co.	.....	1931
Hope Construction and Refining Co.	Hopana, S-O-Tane, Protane	1920
Lone Star Gas Co.	Stargas	1929
Mars Co.	.....	1928
Petrolane, Ltd.	.....	1931
Philgas Co.	Philgas	1927
Shell Oil Co.	Shellane	1929
Shell Petroleum Co.	Shellane	1929
Skelly Oil Co.	Skelgas	1928
Sloan and Zook Co.	.....	1916
Standard Gasoline Co.	Flamo, Bu-Gas	1928
Standard Oil Co. of Indiana	.....	1931
Union Oil Co. of California	.....	1931
Viking Distributing Co.	.....	1931

Butane-air plant at Aiken, S. C., supplying domestic consumers, by distribution through pressure pipe lines.

60,000 Bbl. Per Day From An Exhausted Field

In the Allegany and Bradford Fields Efficient Water Drive is Resulting in Profitable Production from Sands Formerly Considered Exhausted.

By W. N. Davis

Field Superintendent
N. V. V. Franchot

BRADFORD and Allegany Fields comprise a structure of over 180,000 acres. In the Bradford Field, the sand ranges from 30 to 70 ft. in thickness, and in the Allegany Field from 10 to 50 ft. in thickness, but there are places where there is less sand, and others where there is more. Recovery per acre is about the same, however, due to the greater saturation of the Allegany sand. These two fields contain the best known sands most suitable for water flooding. This is due to the hardness, or closeness, of the sand, and to the fact that, for flooding within a small area, it is practically level. Over the entire field there is a change of only 200 or 300 ft., but this is gradual, and not rolling or waving, as in the Western sands.

From 1871 to 1914 thousands of wells were drilled in these two fields, producing over 240,000,000 bbl. of the highest grade crude oil in the world. During this time, however, rock pressure had been reduced to practically zero, due to the pumping of these numerous wells and the careless waste of gas. As a matter of fact, in 1914 the Bradford and Allegany Fields were considered good old has-beens.

Repressuring

QUITE accidentally a change came over the fields, when some producer ineffectually plugged an abandoned oil well or had pulled the casing without plugging the hole at all, which was against the law at that time. The well thus abandoned filled up with subsurface water and the hydrostatic pressure of the water on the sand forced the oil ahead of it into nearby producing wells. In a short time these wells picked up from a pail of oil a day to one, two or three barrels. Some of the producers began to view this change with alarm, but the more studious ones viewed it as a good thing because it would force oil into the producing well that otherwise would not be recovered. Producers held public meetings both in Pennsylvania and in New York State with a view to having the law changed in regard to the plugging of oil wells and the repressuring of the oil sand with air, gas, water or other substances. This law was revised in New York in 1919, and in Pennsylvania for McKean County in 1921.

It was estimated that some 500,000,000 more barrels of oil would be recovered by repressuring. Consequently, experiments were carried on over a long period of time to determine which substance was the best to use, and which system was the most efficient. Soda ash was one of the first chemicals used, but was found to plug the pores of the sand rock. Air was tried by several producers, but was only partially successful, as the air would bypass the oil in most cases coming out through the producing well into the gas lines in a combustible mixture, which in some cases proved disastrous. Repressuring with gas was found to be the most economical, but, due to the scarcity of gas in the field, this idea had to be abandoned. This, then, left water as the most successful method of them all for repressuring the sand rock.

Water Flooding

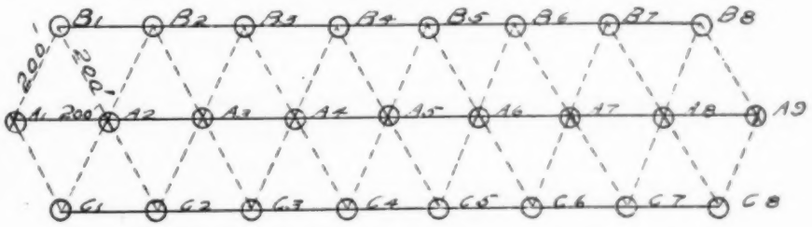
ONE system of water flooding after another was used, but the first system was known as the circular flood. A well was drilled through the sand and torpedoed. Split or perforated casing was set with a packer below the subsurface water, and tubing perforated at the top and bottom was run to the bottom with a second packer just above the sand. The tubing filled with water, forming a pressure on the sand and forcing the water into it. The water travelled from 25 to 75 ft. a year, according to sand porosity in that particular locality, driving the oil ahead of it into nearby producing wells which were drilled on the circumference of a circle around the water well.

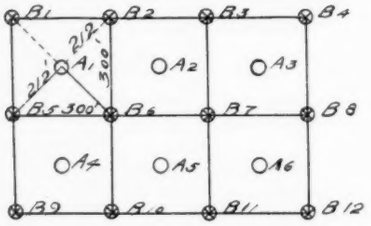
From this system developed the line or diamond flooding system. By this method it was assumed that a producing well would do two or three times as much oil if two water wells were used against it than if only one were used. Theory here is that floods opposing each other will tend to push oil in a direction at right angles to the line of water travel. Thus if a well is drilled on a line perpendicular to the line between two water wells, it will surely be in line with the travel of oil. It is left to the judgment of the producer and to the porosity of the sand as to what distance from the water wells he should locate his producing well.

In the accompanying diagram the center row of wells marked with crosses represent water wells, and the two outside rows, designated B and C, are producing wells. It illustrates how the oil wells are drilled at right angles to the line between the water wells, equidistant from the water wells and from each other. As soon as the rows of wells B and C are flooded out or are doing a large amount of water and little or no oil, they are turned into water wells, and new oil wells are drilled ahead and equidistant from the new water wells. The life of an oil well is dependent upon porosity of the sand and intensity of the flood, but, under present methods of operating, is usually not more than five or six years.

As the diamond flooding system fol-

Diamond flooding system used in Allegany and Bradford fields. Center row of wells marked with cross are water wells; outside rows marked B and C are producing wells.





Five spot flooding system. Wells marked B are water wells; those marked A are producing wells.

lowed the circular flood, so the five spot followed the diamond flood. In this case the area to be drilled and flooded is divided into squares with water wells on the four corners and the oil well completing the five spot is drilled in the center. The line of reasoning in arriving at this method is along the same line as that used in the line flood, only it is more comprehensive.

Five Spot System

IN THE second diagram B5, B6, B7 and B8 form a line of water wells. The two rows of A wells drilled at right angles and equidistant from the water wells are the oil wells. Now supposing that we drill the water well B2, we have doubled the area to be flooded by drilling only one more well. Then why not drill B1 and double it again? It can easily be seen now that by drilling two additional water wells at the beginning, we have covered four times the area to be produced by A1. By drilling three more water wells we will have two more oil wells, or by drilling four more water wells we will have three more oil wells. Operating in this manner the initial cost is greater, but total cost is considerably less and the recovery of oil per acre is greater.

In one of our operations using the line flood we drilled and equipped 30 oil wells on 20 acres, whereas if we had used the five spot method on the same piece we would have had 20 water wells and only 12 oil wells to equip and operate with the recovery probably much greater. Wells that were doing 8 or 10 bbl. on a line flood were doing 20 to 25 by the five spot system. On one piece of 50 acres we made plans consisting of 35 water wells and 28 oil wells. The larger the acreage, the smaller is the ratio between water and producing wells.

As soon as the five spot system came into use, and the potential recovery warranted it, large corporations were formed involving millions of dollars. Four and five thousand dollars an acre for this once dead field was not uncommon. To cut expenses recovery had to be rapid, but there was not enough subsurface water to supply adequately all of the water wells over a large acreage. Consequently, water plants were built to furnish additional water with high pressure. This involved the use of surface water or exposing subsurface water to the air. As there was a question as to whether the suspended matter, iron or some other precipitates in the water would not plug up the pores of the sand, filters had to be included in the plans of the pressure plant. We were then in the midst of a scientific period in the recovery of our oil. With water plants equipped with filters and high pressure pumps, no wonder the producing wells increased from an 0–12 bbl. to 25–35 bbl. each. It has been proved beyond doubt that high pressure not only made a quicker recovery of oil, but actually increased its recovery per acre.

It is felt by a majority of producers in the Bradford and Allegany Fields that a quantity of oil is being pocketed or trapped, even in the five spot system, and that a new and more efficient system must be developed. A possible answer may be found in the seven spot system, in which water wells are drilled on the corners of a hexagon with the producing well in the center.

It is true that this system eliminates the possibility of pocketing or trapping the oil to a greater extent than the five spot system, but it entails a greater initial cost and a longer period of time before recovery of oil begins. This has been a great problem of the past, because of the large interest on investment by larger corporations, and lack of capital by smaller independent producers. If these two factors can be overlooked, as some producers are in a position to do, the delayed five spot system is preferable.

Delayed Drilling

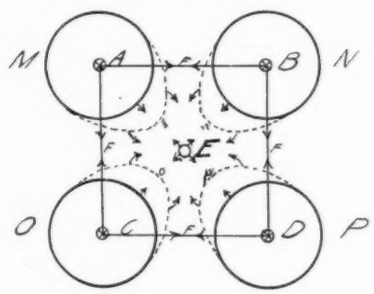
AS A matter of fact, we are strongly in favor of delayed drilling, no matter which method is used. By this system, drilling producing well is delayed from six to twelve months, according to sand porosity after the water has been turned into the intake wells. Greater recovery will more than compensate for delay in drilling the oil wells. Let us consider the reasons. Variation in porosity within a single well is often very great, and the variation in porosity of the several wells drilled within the same locality is often different. Water may travel faster in the top of the sand in one well, and in the middle or bottom of the sand in another. If the oil well is drilled in the center at the same time the water wells are drilled, gas lying dormant in the center is allowed to escape into the gas lines; oil pushed into the producing well from the softer portion of the sand is pumped out into the tanks. The water more than ever then continues to travel through this soft portion of the sand, following lines of least resistance. As yet there is no conclusive proof that the water travels through all the hard portions of the sand, even though the pressure has been increased on the water well, or that all of the oil directly between water wells has been forced into the producing well.

Let us now consider what action results from putting the water on the sand six or eight months before the oil well is drilled.

Water entering the soft portions of the sand from water wells A, B, C and D in the third diagram will eventually meet in the center at E, and there will form a back pressure at E in this portion of the sand, greater than intake pressure. The water will have to start its course then through the hard portions whether in the top, middle, or bottom of the sand. As the water enters any portion of the sand, it drives gas, as well as oil, ahead of it. A back pressure is formed in the center as well as between each pair of intake wells. Back pressure becomes stronger and stronger in all directions, until it is practically uniform over the entire five spot. This is shown by the fact that the water wells are taking less water each day. Let us say that the water has travelled as far as the circumference M, N, O and P, and that we drill the producing well now at E. Due to the vent made in the center of the five spot, oil and gas move at a fast rate into the producing well, seeking an escape. The direction of water travel now takes the form of an ellipse, as shown by M, N, O and P. Forces at F will turn toward the center seeking an escape and taking with them oil lying directly between water wells. In doing this it is our belief that oil is recovered from all portions of the five spot, even though the water may not reach every inch of it.

As soon as the oil wells are drilled, water pressure should be increased so that pressure created within the five spot will remain as nearly constant as possible. Results of our experiments two years ago, and results today have proved this theory.

Action of water drive in the delayed drilling five spot system.



International News and Reports

Bureau of Public Roads reported a decrease in registration of automobiles in the United States amounting to 781,178 or 2.8 percent. Registration of motor vehicles during 1931 was 25,814,103.

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Gasoline prices in New York City were cut four cents a gallon at the service station by the Standard Oil Company of New York.

▼

Eight thousand tons of cracked gasoline, intended for sale in the United States market, have been shipped from Roumania by the Steua Romana on the tanker SALANDRA.

▼

In a survey of the world shale oil industry, A. A. Swinnerton, Canadian Department of Mines, has placed the annual production of shale oil at between 17,000,000 bbl. and 21,000,000 bbl., representing only a slight change from the production of ten years ago.

▼

Asiatic Petroleum Corporation recently completed the erection of four large oil storage tanks on an island in the Whangpoo River 15 miles from Shanghai. The tanks have a capacity of approximately 54,000 bbl. each and include many modern construction features.

▼

Newness shale works supplied the first 5,000 Imperial gallons of motor fuel produced at this plant to the motorists of New South Wales recently and production of various grades of refined petroleum products from shale is being continued in response to numerous orders.

▼

On the ground that the recent Supreme Court decision upholding proration in Oklahoma gave the State Corporation Commission sufficient authority to control production, Acting Governor Robert Burns lifted martial law in the Oklahoma oil fields on May 20. Governor Murray speaking in Hudson, N. Y. commented that he would take care of this action when he got back and restored martial law on his return, May 27.

▼

Uruguay fuel monopoly has decided to carry on extensive exploration for oil, coal and gas with a view to Federal Government exploitation of any such resources discovered. The monopoly could use these natural resources to replace imports which furnish the sole source of Uruguay's present supply of petroleum. A contract has recently been concluded with the Soviets for a supply of gasoline and kerosene.

▼

Contract recently concluded with the Soviet oil industry for the purchase of 50,000 tons of crude oil will enable the North Sakhalin Petroleum Company, a Japanese concern, to supply some 332,000 tons of oil to Japan during 1932. Production in Sakhalin and other contracts will supply the balance of the oil that the company expects to ship into Japan.

Shell Tanker NASSA, illustrated on page 125 of the March issue of WORLD PETROLEUM, was loaned by the Shell Company to the Commonwealth Oil Refineries for the purpose of transporting motor spirit from the C. O. R. installation at Melbourne to Sidney. The photograph was taken while the tanker was discharging 2,481 tons of motor spirit at the C. O. R. terminal at Sidney. The supply was not from the Dutch East Indies.

▼

Bunker fuel oil and Diesel oil are sold at Cristobal or Balboa from tanks of the Panama Canal and by private oil companies. Bunker fuel oil is sold by the Panama Canal at $1.00 per barrel and by private concerns at present for $0.75 per barrel. Diesel oil is sold by the Canal at $1.50 per barrel against $1.25 per barrel quoted by private concerns.

▼

FOREIGN OIL LEGION

MR. AND MRS. E. H. CAUFIELD returned May 28th from Chauk, Burmah, where Mr. Caufield has for the past 28 years been connected with the British-Burmah Petroleum Company. They are visiting at Mr. Caufield's home in Olean, N. Y.

▼

H. S. BOWLBY, field agent for the Burmah Oil Company, is expected to arrive shortly from London to spend about two months in the United States.

▼

ALBERT MILLER, field manager for the British Controlled Oil Fields, Ltd. at El Mene, Venezuela has returned to London for an indefinite stay.

▼

D. C. WALKER, drilling foreman for the Burmah Oil Company has returned to the United States for three months vacation.

▼

E. P. SENIOR, field manager for the Compania Ferro-Carrilera De Petroleo at Comodoro Rivadavia oil fields sailed for London on May 20th after spending several weeks studying drilling and production equipment in the California oil fields.

▼

G. H. CANN has been appointed acting chief engineer of Anglo-Persian Oil Company in Persia.

▼

CAPTAIN T. S. MASTERSON, a director of Phoenix Oil and Transport Company, recently paid a visit to London from Roumania.

▼

ALBERT MILLER, production superintendent and field engineer of British Controlled Oil Fields, is in London from Venezuela.

▼

LIONEL C. BALL, who has been acting for the past year as chief geologist to the Queensland Government, has now been officially appointed in that capacity.

▼

H. W. PULMAN of the Burmah Oil Company is in the United States on business and will visit principal American fields.

LIBRARY

BOOKS relating to the petroleum industry may be obtained from the Book Department of WORLD PETROLEUM at the publishers prices plus postage.

General

IN A PERSIAN OIL FIELD, by J. W. Williamson (192 pp. 7/6 d.). A second revised and enlarged edition of a well known book dealing with the scientific development of a great industry in the Persian desert. The author and publisher emphasize the fact that the book deals particularly with the application of scientific principles to industrial development, but the book is not primarily technical. It may be read with appreciation by the general reader for its interesting information on the life and work of producing important supplies of oil in a remote area. Divided into two sections, the first dealing with the scientific aspects of production, transportation and refining of oil, the second with the human material with which this petroleum is produced, the book benefits from an almost narrative form. It is restricted entirely to activities of the Anglo-Persian Oil Company in Persia.

The revised edition brings developments of the application of science to industry abreast of the times including the highly important changes and improvements that have occurred during the past three years. A new chapter, entitled "Oil and Ethics" has been added dealing with international aspects of the petroleum industry, a subject that is becoming increasingly important.

No review of Mr. Williamson's work is complete without reference to his vivid and agreeable style of writing which makes this book of cold facts equal in interest to purely imaginative fiction. Mr. Williamson's style is exactly suited to his subject.

THE PROBLEM OF OIL, by Christopher T. Brunner (231 pp. 15/). This is a most timely book dealing with the British marketing situation and the various companies selling petroleum products in that country. Mr. Brunner, as an author, feels, like many readers, that the distributing end of the petroleum business has been neglected in the considerable literature on oil which has dealt largely with technical or sensational aspects of the industry. THE PROBLEM OF OIL deals with the economics of marketing in a broad way and with the actual mechanics of distribution in Great Britain. One chapter devoted to the present position, covers the large oil groups, the "combine" and the "pirates." As a background for the study of the present changing and complex situation in the British market this book is of considerable value to the student of international petroleum marketing. It should, however, be remarked that no book on this subject is likely to cover the most recent developments of a set-up that is changing month by month and which may be expected to present quite a different appearance between the time that the book is written and its first appearance in print.

Technical

LOW TEMPERATURE CARBONIZATION EXPLAINED, by Murray Stuart (54 pp. 4/–). This brief treatise explains as well as space limitations permit the process of low-temperature distillation which the author for various reasons prefers to call low-temperature carbonization. This process has attracted considerable attention, especially in England and other countries depending on imported petroleum supplies. Shares in companies purporting to control process that will operate profitably have been offered for sale and in order to take a sane view of the various processes for which great claims are being made a simple explanation of low-temperature carbonization should be of great value. Mr. Murray explains that the process of heating coal to obtain oil was well known before the petroleum industry became well established and that the only question to decide is the ability of such a process to produce oil in commercial quantities at a cost that will allow the company operating the process to make a profit at the present price of oil. This consideration would, of course, eliminate a large number of countries from consideration as locations for the low-temperature carbonization of oil shale or coal. Agitation, however, is most active in countries that artificially maintain prices within the national borders and have inadequate domestic supplies. A most practical chapter is devoted to consideration of whether low-temperature carbonization can operate at a profit. A detailed table gives results of the operation of these processes.

THE MODERN DIESEL (142 pp. 2/6 d.). A handbook of elementary principles of the operation of compression ignition engines for land, sea and air craft. Covering the history of the Diesel briefly, this book describes the compression ignition cycle, operation of the Diesel, and devotes several chapters to a review of the various makes of transport engines in use in the world. On the whole THE MODERN DIESEL devotes more attention to compression ignition engines used for transport than to stationary engines. It is, however, a book that should attract a class of readers who have not the time or technical knowledge necessary to dig simple facts out of the highly technical literature covering operation of Diesel engines. In spite of the limited space available in a book of this size, the text is well illustrated with diagrams and pictures. Tables listing the characteristics of the principal makes of Diesels for oil engines, air-craft engines, and marine engines should be particularly useful.

INDUSTRIAL OIL ENGINEERING, by John Rome Battle (1141 pp. $10.00). Third revised Edition. The third edition of this standard reference work has been rather thoroughly revised and brought completely up to date. Abounding in technical information tables and specifications this book is of great value to the oil engineer, manufacturer of oil equipment and others interested in the technical aspects of petroleum utilization. Principally a reference work. It has proved most popular. A large section of the book is devoted to lubrication including as it does a revised and enlarged edition of the LUBRICATING ENGINEERS' HANDBOOK.

Geology

THE QUANTITY AND SOURCES OF OUR PETROLEUM SUPPLIES, by J. A. Macfarlane (250 pp. $3.00). A complete review of the petroleum resources of North America. Mr. Macfarlane's views on the large quantity of petroleum available for the future and its formation from the remains of fish-like organisms that were destroyed by volcanic disturbances have been set forth in two previous books. The present volume deals with the origin of petroleum only as it affects future supplies.

United States

	Daily Production bbl.	Daily Runs to Stills bbl.	Gasoline Stocks bbl.	IMPORTS FOR WEEK Total bbl.	IMPORTS FOR WEEK Gasoline bbl.
Week Ending Apr. 30	2,177,500	2,280,700	46,403,000	1,635,000	119,000
	334,850*				
Week Ending May 7	2,251,900	2,183,700	45,621,000	1,660,000	40,000
	342,500*				
Week Ending May 14	2,237,400	2,359,600	44,798,000	2,050,000	301,000
	332,900*				
Week Ending May 21	2,225,350	2,364,400	44,703,000	1,712,000	311,000
	338,100				

Underlined figures indicate improvement in statistical position—decrease in production, runs to stills, gasoline stocks or imports.

* Production of the Rusk-Gregg field, East Texas.

Tax Bill

THE Tax Bill which has passed the House of Representatives in April, 1932, has been remodeled by the Senate Finance Committee, which, among other changes, altered the schedule of import duties on petroleum products and also has reduced the tax on oil transported by pipe lines. On May 20 the Senate voted for the oil tariff, writing it into the tax bill by a vote of 43 to 37.

The reduction of the import duties on crude and fuel oils has been evidently a concession to the eastern States which consume large quantities of such products imported from South America, while the western States apparently accepted in return a higher protection for gasoline and lubricating oils.

The tax bill, when fully approved by the Senate, will be returned to the House of Representatives for further consideration in its altered form. Some changes will be made, but on the whole the taxes affecting the oil industry, as indicated above, are not likely to be again remodeled.

Proposed Petroleum Taxation

	Voted by the House Duty	Voted by the House Yield	Voted by the Senate Duty	Voted by the Senate Yield
Manufacturers' excise tax				
Lubricating oils	4 c per gallon	$35,000,000	4 c per gallon	$35,000,000
Imported Oil				
Gasoline, fuel oil and crude oil	1 c per gallon	5,000,000		
Gasoline			2½ c per gallon	
Crude and Fuel oils			½ c per gallon	
Lubricating oil			4 c per gallon	5,000,000
Paraffin			1 c per pound	
Asphalt and bitumen			10 c per 100 lb	
Oil transported by pipe line	8% of charge	20,000,000	3% of charge	6,000,000
		$61,000,000		$46,000,000

Supply and Demand

INDICATED domestic consumption of motor fuel in March, 1932, averaged 950,000 bbl. per day, representing an increase of 8.7 percent over the daily average of February, 1932, but being 4.3 percent below March, 1931, thus indicating continued slowing up in domestic motor fuel consumption. Exports of motor fuel increased 3.0 percent in the same period, resulting in a net decline in demand for motor fuel of 2.7 percent.

On March 31 the total motor fuel stocks, at refineries, terminals and in transit, reached 62,920,000 bbl., an increase of 956,000 bbl. over the previous month. At current rate of total demand March stocks of motor fuel represent 60 days' supply, compared with 64 days' supply on hand the previous month.

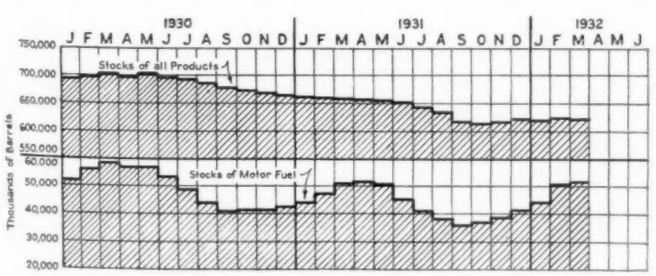
Prices

REFINERY gasoline prices remained steady during the past month but weakened somewhat toward the close of the month. Quotations on May 22 were 4¼–4½ cents per gallon for 58–60 U.S.M., 57 octane rating, in Group 3 (Oklahoma) market; 57 to 64 octane rating gasoline, U.S.M., commanded 4⅝–4¾ cents per gallon and 65 and above octane rating grade, U.S.M., was quoted at 4⅞–5¼ cents per gallon. Gulf Coast prices for export remained without change at 5 to 5¼ cents per gallon for 58–60 U.S.M.

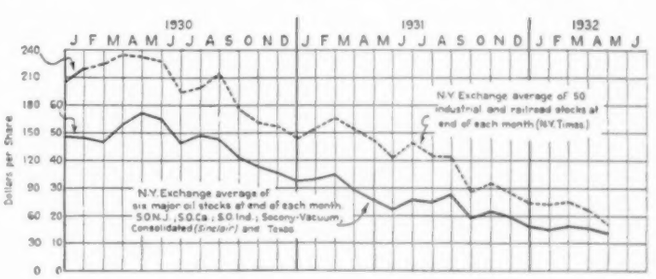
Natural gasolines eased off somewhat being quoted at 2 cents per gallon for grade 26–70 (former AA).

Kerosene prices increased very considerably in the past two months being quoted on May 17 at 4 to 4⅛ cents per gallon for grade 41–43 w.w., as compared with 2½ cents per gallon at the end of March, but the price again weakened to 3½ to 4 cents per gallon by May 22. A greater use of kerosene—gasoline mixtures in tractors by the middlewestern farmers

Relation of stocks of all petroleum products to gasoline stocks.



Six major oil stocks in relation to 50 industrial stocks on the New York Stock Exchange.



is reported as being the cause of the larger demand and higher prices in that commodity.

Crude oil prices remained without change.

Retail gasoline marketing suffered its usual upsets due to price cutting by independent stations, the most notable instance being a recent reduction of 4 cents per gallon in the price of gasoline by all major distributors in the metropolitan area of New York City, following sales for some time from the independent stations at 12½ cents per gallon, as compared with 16 cents per gallon posted by all major companies. It is considered that the independent service stations will be unable to undercut the prices further because the tank-car quotations are currently 7¼ cents per gallon, which makes the initial cost, including the State tax, 10¼ cents per gallon.

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Legal Proration—Supreme Court Decision in Oklahoma

ON May 16 the authority of the Oklahoma Corporation Commission to exercise its judgment in curtailing the production of oil was unanimously sustained by the United States Supreme Court in an opinion handed down by Justice Butler. The decision ended a long drawn out legal battle on the validity of "oil proration" and has thereby effected a most stabilizing influence on the oil industry. If the Supreme Court had ruled against the validity of "oil proration" the immediate effect upon the oil industry might have been disastrous; moreover recent legislation to stabilize the cotton industry in Louisiana, South Carolina, Mississippi and Arkansas would have almost necessarily been overthrown; likewise such decision would have closed the door to the enactment of similar legislation for agriculture and the coal industry.

The Oklahoma act, in substance, authorizes the Corporation Commission to determine the value of crude oil or petroleum, and prohibit production at times when there "is not a market demand therefor at the well at a price equivalent to the actual value." The suit was brought by the Champlin Refining Company against the Corporation Commission, and it was appealed from the Western Oklahoma District Court. In sustaining the Oklahoma law the Supreme Court passed for the first time on an effective proration plan, making unquestioned the State's right to prorate oil production to market demand.

Justice Butler said in part:—

"None of the commission's orders has been made for the purpose of fixing the price of crude oil or has had that effect. When the first order was made, the price was more than $2 a barrel, but it declined until at the time of the trial it was only 35 cents. In each case the commission has allowed to be produced the full amount of the market demand of each pool. It was not shown that the commission intended to limit the amount of oil entering interstate commerce for the purpose of controlling the price of crude oil or its products, or of eliminating plaintiff or any other producer or refiner from competition, or that there was any combination among plaintiff's competitors for the purpose of restricting interstate commerce in crude oil or its products, or that any operator's committee made up of plaintiff's competitors formulated the proration orders. The evidence before the trial court undoubtedly sustains the findings above referred to, and they are adopted here. Plaintiff herein insists that the act is repugnant to the due process and equal protection clauses of the Fourteenth Amendment. We need not consider its suggestion that the business of production and sale of crude oil is not a public service and that it does not devote its property to the public use. The proration orders do not purport to have been made, and in fact, were not made, in respect of services or charges of any calling so affected with a public interest as to be subject to regulation as to rates or prices. Plaintiff insists that it has a vested right to drill wells upon the land covered by its leases and to take all the natural flow of oil and gas therefrom so long as it does so without physical waste and devotes the production to commercial uses. But if plaintiff should take all the flow of its wells there would inevitably result great physical waste, even if its entire production should be devoted to useful purposes."

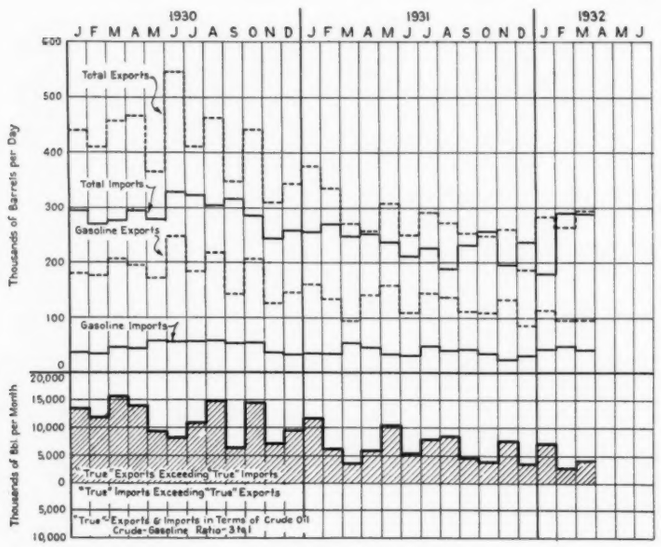
The decision was qualified as follows:—

"But such affirmance will not prevent it (the oil company) in an appropriate suit, a different state of facts being shown to exist, from having an injunction to restrain the enforcement of any order proved not to be authorized by the act or unjust and arbitrary and to operate to plaintiff's prejudice."

The Supreme Court, in its decision, invalidated section 9 of Oklahoma act which would have placed in the hands of receivers properties of proration law violators; the State, however, may obtain injunctions to prevent violation of proration laws, or violators may be punished for contempt of a corporation commission order.

The decision of the United States Supreme Court in upholding the Oklahoma oil proration law improved the chances of the Federal Interstate Compact to control petroleum production. The bill to authorize the negotiations for an agreement among several oil producing States, pending now in Congress, has recently received a favorable report from the Federal Oil Conservation Board. The proposed measure depends entirely upon the right of individual States to prorate the production of oil and gas, and therefore had the Supreme Court found the Oklahoma act invalid, all prospects of concerted action by oil producing States would have been eliminated. In its present form the proposed Federal Interstate Compact measure is as follows:—

Total petroleum exports in relation to imports; gasoline imports and exports; and true exports exceeding true imports.



Sect. 1 Outlines the form and objectives of the compact;
Sect. 2 Provides that State laws passed under the compact shall not be considered as interfering with interstate or foreign commerce;
Sect. 3 Provides means to make the compact effective;
Sect. 4 Provides for a Federal representative to preside over negotiations for the compact;
Sect. 5 Puts a limit on imports of foreign oil, under rulings of a Federal conservation board;
Sect. 6 Makes powers conferred by the bill immediately effective by placing them in the hands of the oil States Advisory Committee for a term not exceeding three years before an interstate compact can be put into effect.

The Acting Governor of Oklahoma, Robert Burns, in the absence of Governor Murray, lifted the martial law from the Oklahoma oil fields stating that the decision of the United States Supreme Court, upholding the State proration law, gives the State corporation commission ample authority to deal with the situation. This action was in direct opposition to Governor Murray's plans; the governor stated, prior to leaving the State, that the oil fields would remain under martial law to prevent issuance of injunctions from inferior Federal courts. Governor Murray at that time stated:—"No matter what the upper court says, the lower courts are apt to issue injunctions, I don't dare lift martial law." Actual existence of martial law, however, is not of paramount importance as long as oil operators remain certain that Governor Murray will declare it again under the slightest provocation. It may be assumed with reasonable certainty that most of the oil companies will refrain from further attempts to break the proration law of Oklahoma, inasmuch as the Governor will shortly devise means of supporting the oil enforcement organization by a minimal gross production tax, rather than by contributions from the larger oil companies, a feature unpopular with the smaller producers.

Governor Murray, on his return to Oklahoma on May 27, immediately revoked the acting Governor's order and re-established martial law in the Oklahoma fields.

Greater Seminole—Oklahoma

GREATER Seminole area under the influence of higher crude oil prices is experiencing a revival of drilling.

The wildcatting centers in the area south of the St. Louis pool where two Simpson sand fields were opened recently, one in section 35–17N–R4E and the other in section 25–T6N–R4E. Oil in these pools was encountered at 4,260 and 3,500 ft. respectively, initial production ranging from 500 to 2,000 bbl. per day.

Of relatively greater importance is the development of thin sands and sandy limestones in the lower Pennsylvanian section of the Greater Seminole area. Such pools cover a considerable area and cumulatively will produce large quantity of oil, though probably not enough at any one time to become a serious threat to the State's oil industry. Among areas recently developed and being developed at this time are, the Fish pool in T7N–R8E where wells up to 2,500 bbl. per day are encountered at about 3,100 ft. in the sandy phase of the Wapanucka limestone, and the East Earlsboro pool where an old well of the Stanolind Oil and Gas Company in section 20–T9N–R6E was plugged back to 2,800 ft. and had an initial production of 2,595 bbl. per day possibly from the Calvin sand of lower Pennsylvanian.

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Voluntary Proration—Sharkey Bill Defeated in California

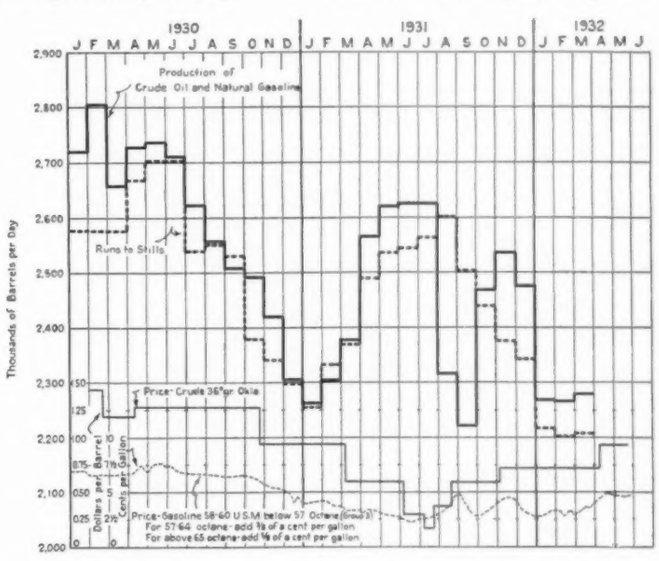
SHARKEY Bill for control of California production and storage by an elective commission was overwhelmingly defeated by the voters of that State in the special election on May 3, the vote being more than 3 to 1 against the Bill. The existing Gas Conservation Law therefore remains the only enforceable legal stabilizing influence, outside of the voluntary curtailment agreements.

Several conferences between leading executives of California oil companies were held in San Francisco and Los Angeles to devise means of continuing voluntary proration. It has been proposed to lift curtailment entirely from the small wells, maintaining greater restrictions on flush pools; also a dual price structure for crude oil has been proposed; producers who comply with proration receiving higher prices than those overproducing.

According to figures of the State Oil Umpire 18 large oil producers, owning 10,987 oil wells, have a daily potential of 899,629 bbl., 84.59 percent of State's potential, produce 374,982 bbl. or but 32.32 percent of their potential, whereas all other producers, owning 5,247 oil wells, and having a daily potential of 163,971 bbl. produce 122,700 bbl. or 72.83 percent of their full potential. Therefore, the 18 large companies at this time are bearing 92.70 percent of the restrictive measures, while the smaller producers share of State's shut-in production is only 7.30 percent. These figures indicate that even though the small producers are supporting proration only superficially, the large companies are still attempting to hold the production within sensible limits, even though such action entails at least a temporary loss of retail markets.

Defeat of the Sharkey Bill probably

Production of crude and natural gasoline and runs to stills in relation to crude oil and gasoline prices.


1930
1931
1932
J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J
Production of Crude Oil and Natural Gasoline
Runs to Stills
Price-Crude 36° or Okla.
Price-Gasoline 58-60 U.S.M. below 57 Octane (regular)
For 57-64 octane add ⅛ of a cent per gallon
For above 65 octane add ¼ of a cent per gallon
Thousands of Barrels per Day
Dollars per Barrel
Cents per Gallon
2,900
2,800
2,700
2,600
2,500
2,400
2,300
2,200
2,100
2,000

World Oil Production—Official Figures

All figures furnished direct to WORLD PETROLEUM by Governments, except where otherwise specified

(Figures in U. S. barrels—Conversion ratio 7 bbl. = 1 ton)

Country	Total 1931	Daily Av. 1931	January 1932	February 1932	March 1932	April 1932	Daily Av. 1932
United States	850,275,000	2,329,521	66,884,000	62,484,000	67,189,000	66,282,850[3]	2,172,230
Russia	156,342,900	428,957	13,059,900	12,194,000	13,852,300	13,101,200	431,468
Venezuela	120,069,462	328,337	9,939,027	9,469,873	10,398,514	10,000,000[1]	328,987
Roumania	46,333,945	123,510	3,780,000	3,750,000[1]	3,750,000[1]	3,750,000[1]	124,215
Persia[2]	40,149,977	126,942	3,228,780	2,834,090	3,516,611	3,488,674	108,001
Mexico	33,038,853	90,517	2,869,177	2,761,064	2,967,842	2,992,303	95,789
Dutch East Indies	32,818,346	89,913	3,943,147	3,652,432	2,844,065	2,850,000	109,832
Colombia	18,237,190	49,965	1,533,969	1,401,554	1,668,699	1,655,922	51,737
Argentina	11,713,049	32,091	1,116,800	1,040,000	1,192,700	1,078,500	36,595
Peru	10,102,116	26,722	945,231	750,804	697,622	732,308	24,295
Trinidad	9,753,792	32,086	846,878	828,860	874,145	852,080	28,115
British India	7,830,101	21,452	750,251	698,645	719,337	700,000[1]	23,704
Poland	4,397,760	9,146	351,365	324,100	334,495	336,231	11,125
Sarawak	3,338,472	12,049	210,748	200,102	197,050	191,282	6,605
Japan and Taiwan[1]	1,884,285	5,135	195,000	195,000	195,000	195,000	6,446
Egypt	1,845,938	5,057	138,796	137,431	142,275	151,305	4,626
Ecuador	1,750,633	4,796	126,406	111,361	126,024	133,844	4,113
Canada	1,583,339	4,338	96,912	90,841	97,484	95,585	3,147
Germany[5]	1,778,602	4,873	148,197	150,197[4]	262,528	141,780	5,807
Iraq[1]	1,200,000	3,290	100,000	100,000	100,000	100,000	3,306
France	512,862	1,405	46,000[1]	46,000[1]	46,000[1]	46,000[1]	1,520
Others[1]	338,700	928	36,000	36,000	36,000	36,000	1,190
	1,355,295,322	3,713,138	110,346,620	103,256,354	111,107,691	108,910,864	3,582,109

[1] Estimate. [2] Anglo-Persian Oil Co. figures revised; fuel oil returned to the ground has been deducted.
[3] A. P. I. [4] No production in Thuringia January 13 to March 10. [5] Including Thuringia.
Sakhalin (Russian) included with Russia. Sakhalin (Japanese) included with Japan.

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eliminates all possibility of increased crude oil prices in California during this summer. A contributory factor preventing a rise in crude oil prices is the familiarity of the consumers in Southern California territory with very low gasoline prices; therefore, upon introduction of third grade motor fuel by most of the major companies it was found that nearly two thirds of their sales were in the lower grade quality, buying being controlled heavily by price.

As was indicated in past issues of WORLD PETROLEUM, major companies in California may definitely adopt during the coming summer a policy of allowing maximum outlets to smaller producers who are responsible for under-selling, thus draining their oil reserves. The great majority of offending producers are located in Los Angeles fields, which are declining rapidly. In future major companies should, and undoubtedly will, attempt to obtain fuller control of new flush fields in order to prevent the recurrence of price wars, even if such policy will entail larger initial expenditures.

FIELD operations in California are definitely picking up. During the week ending May 7 there were reported to State Oil and Gas Supervisor 25 notices to drill new wells, as compared with 18 during the previous week. Total new wells this year are 134 as compared with 168 at the same date last year.

Middle Dome—Kettleman Hills

STANDARD Oil Company of California in its No. 6-29V found production at 7,825 ft., the well flowing 1,250 bbl. of 53 gravity crude and about 36,000,000 cu. ft. of gas. The well is being deepened to test the lower Temblor formation. This well is the second completion on the Middle Dome of the Kettleman Hills proving this secondary structure definitely for commercial production. Middle Dome is much smaller in area than the North Dome, being estimated to cover not more than 2,000 acres, and limited lease ownership will prevent its rapid development. Standard Oil Company of California controls fully one-half of the Middle Dome structure, while the other half will be in all probability unitized.

North Belridge

BELRIDGE Oil Company's No. 64-27 in the North Belridge field of Kern County, located in section 27-27-20, was completed at 8,062 ft., flowing 3,000 bbl. of 48 gravity oil, accompanied by 32,000,000 cu. ft. of gas. This third productive zone in the North Belridge field has been found 2,500 ft. below the second pay discovered in 1931. It is considered that the production is derived from the upper half of the Temblor formation, from a zone correlatable with the Elliot gas zone in the North Dome of the Kettleman Hills.

The new discovery is of major importance, adding large crude reserves to the North Belridge field, and probably also to the other fields in the San Joaquin Valley. However, because of deep drilling and due to the fact that all leases in the prospective areas are held by the larger oil concerns, it is not considered that the newly opened producing horizon in the North Belridge field will become an immediate market factor. On the contrary it is believed that the Belridge Oil Company may be willing to shut in its new producer for one year, thus delaying the development.

Gulf Coast—Texas

AS WAS reported in the last issue of WORLD PETROLEUM an important development took place in Montgomery County where two large gas wells were completed, one in December, 1931, and the other in March of the current year. It was indicated that the Humble Oil and Refining Company (S.O.N.J.) purchased a large interest in the properties of the Strake Oil Company which drilled in the discovery well.

On May 21, 1932, the Strake Oil Company's second well, No. 2 South Texas Development Company, showed for 1,000 bbl. of heavy crude oil on the drill stem test from a total depth of 5,030 ft. The oil is accompanied by 10,000 cu. ft. of gas.

The new well marks the first commercial crude oil production in Montgomery County, and, as previously indicated, may lead to the discovery of a major oil pool, or pools, within 50 to 75 miles from the existing refineries and tanker ports of the Gulf Coast.

Rusk-Gregg—East Texas

IN ORDER to keep production of the East Texas field within 325,000 bbl. allowance set by the Texas Railroad Commission the per well production was reduced to 61 bbl. per day during the first half of May and to 59 bbl. per day during the second half of the month. At current rate of completions the per well allowances will be cut to 51 bbl. per day by July 1, and to 47 bbl. per day by August 1.

At the close of May there were in the Rusk-Gregg field 5,850 producing wells. The rate of new locations and completions continued very high, each approximating 150 per week. Cumulative recovery from the field reached 155,000,000 bbl. by June 1, equivalent to 1,409 bbl. per acre of its proven area. There has been noted a definite decline in average initial production per well per day, reports indicating 3,100 bbl. in February and 2,700 bbl. in March, a decline of 13 percent.

Theft of Crude Oil

GRAND jury appointed by Judge W. C. Hurst to investigate the reported theft of crude oil in the East Texas field returned 158 indictments on May 16, this being in addition to 213 indictments

returned against 18 men in similar cases late last month.

The grand jury reported that:

Our investigations disclose that serious conditions exist in the oil field of Gregg County with reference to unlawful takings of oil and violation of proration orders. We find that some operators have deliberately used various and sundry means of taking oil out of the field and have shipped it away in tank cars and pipe lines and in other ways. This oil has been sold for a price far below the market value and this has been done for personal and selfish gain and with an intention to swindle and defraud the land and royalty owners, who in most cases have not received a dollar for the oil thus illegally run and who have no means of knowing or ascertaining how much of said oil has actually been diverted.

The stolen oil produced through by-passes was usually transported by tank cars to distant refineries, some railway employees cooperating with the illegal producers. To combat this practice in future the Texas Railroad Commission announced that it will require meters on all trunk lines, lines to loading racks and lines to local refineries.

To-date a number of arrests have been made and several suits have been filed against offending operators. It is estimated that about 1,000,000 bbl. were illegally produced. In addition to defrauding land and royalty owners, such illegal operators damaged offset wells which have registered excessive drops in bottom hole pressures. The theft amounted to only 0.67 percent of the total East Texas recovery to date and consequently is of minor proportions, but if not discovered at this time it could easily have become a factor of major importance in premature flooding and pumping of good producers.

Reserves

AT A recent meeting of the Association of American Geologists, H. E. Minor and Marcus A. Hanna reviewed the Geology of East Texas. The field is producing from the sand members of the Woodbine formation of Cretaceous Age; structure of the reservoir is a broad, westward dipping, truncated, monoclinal fold.

On the basis of detailed examination of well cores over the area of the whole field and a detailed geological subsurface study the thickness of the saturated sand in the East Texas field was estimated to average 18.5 ft., being 24 ft. in the northern (Longview) sector, 15.4 ft. in the middle (Kilgore) sector and 16.4 ft. in the southern (Joiner) sector. Average porosity of the sand is estimated at 19 percent, while a 40 percent average ultimate recovery is predicted. It is indicated that of the total proven acreage of about 110,000 acres, 64,000 acres are directly underlain by bottom water. The authors estimate the ultimate production at 13,000 bbl. per acre, or about 1,400,000,000 bbl. for the field.

FRENCH PETROLEUM IMPORTS 1932

(Barrels of 42 U. S. gallons)

	Crude	Gasoline	Kerosene	Lube Oil	Gas Oil	Fuel Oil	Total
Germany	....	5,991	808	3,249	....	....	10,048
Egypt	....	5,938	7	....	....	....	5,945
Luxemburg	....	47,859	520	7,579	2,584	4,655	63,197
United States	....	1,290,728	166,417	250,653	46,849	43,117	1,797,764
England	....	1,233	21	2,560	....	....	3,814
Persia	364,637	575,266	93,713	179	121,101	251,799	1,406,695
Poland	....	2,630	414	4,971	2,815	....	10,830
Roumania	....	504,021	112,623	548	181,024	58,434	856,650
Russia	....	1,140,825	6,521	46,122	80,537	139,174	1,413,179
Holland	....	105	....	98	874	436	1,513
South America	213,238	48,757	9,608	1,037	224,236	608,809	1,107,685
Others	4	14,828	4,610	1,303	4,318	342,326	367,389
	579,879	3,638,181	395,262	318,299	664,338	1,448,750	7,044,709

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In the light of past experience, however, a 40 percent recovery is probably too high; at the very best, as indicated in following review, a 30 percent recovery can be expected, and because of the possibility of an uneven water encroachment may even be around 25 percent, this consideration reducing the ultimate recovery of the East Texas field to 1,050,000,000 bbl., or even lower to 875,000,000 bbl.

D. R. Snow, chief geologist of the Barnsdall Oil Company, at the same meeting presented a most illuminating summary of the Water Encroachment in Bartlesville Sand Pools of Northeastern Oklahoma and its Bearing on the East Texas Recovery Problem. This paper was prompted by the unusual similarity between the East Texas field and some of the larger Bartlesville sand pools of Oklahoma, namely the Burbank, the Nowata, the Bird Creek and the Glenn. In all five the accumulation is due to lensing out, or truncation, of producing sand bodies, which dip gently and thicken considerably westward, while thinning out and disappearing eastward. Moreover the area of the East Texas field and that of the four Oklahoma fields combined is practically the same, while sand thickness in all these fields is very similar. The known major difference is that of the hydrostatic head, which is twice as great in East Texas field as compared with some of the Bartlesville sand fields of northeastern Oklahoma; also the Woodbine sand of East Texas, Cretaceous in age, is more porous and more permeable than the Bartlesville sand of northeastern Oklahoma, Lower Pennsylvanian in age.

Total area of Burbank, Nowata, Bird Creek and Glenn pools is about 100,000 acres and total recovery of these four pools has been to date around 800,000,000 bbl., with an estimated ultimate recovery of 900,000,000 bbl., thus indicating an ultimate average recovery per acre of 9,000 bbl. The per acre recovery of each of the large Bartlesville sand pools varies but little from the 8,000 bbl. average, this figure being estimated at but 15 percent of the total oil content of the saturated sand. The review indicates that the recovery in the Burbank pool is not more than half the ultimate recovery that was anticipated for the field during the early stages of its development based upon the average thickness of the pay horizon and its porosity, and that as a whole the performance of the Burbank pool has been eminently disappointing.

Of the four large Bartlesville sand pools of northeastern Oklahoma the Nowata field alone almost totally lacks salt water, this being due to local sand conditions which prevented eastward migration of water, there being a belt of non-porous sandy shales immediately west of the oil saturated sand. In the remaining three fields there is a considerable amount of water, though hydrostatic head of any importance is noted only in the Bird Creek and the Glenn pools. At this time the wells in Bird Creek pool average 6½ bbl. of water and 2 bbl. of oil per day, in Glenn pool 2.7 bbl. of water and 2.3 bbl. of oil and in the Burbank pool 3 bbl. of water and 6 bbl. of oil.

The author concludes that the East Texas field, due to its greater hydrostatic head, represented by a column of water about 3,650 ft., as compared with 1,650 ft. at Glenn pool, as well as due to the greater porosity and permeability of the Woodbine sand, will recover 30 percent of the oil content of the saturated sand, as compared with 15 percent estimated recovery in the Bartlesville sand pools of Northeastern Oklahoma, providing the production from the field is controlled so that the water may have an opportunity to advance evenly along the water-oil contact without by-passing the oil and shutting it off from future recovery.

It should be noted, however, that the Burbank field, developed in 1921–1924, produced to date 8,268 bbl. per acre, while the Glenn pool, developed in 1906–1907, produced but 7,719 bbl. per acre, though if water drive was of major importance the recovery of the latter pool should have been at least somewhat larger than that of the Burbank field. Also, sand thicknesses are considerably smaller in East Texas field than in some of the Bartlesville sand pools; thus while H. E. Minor and M. A. Hanna estimate the average East Texas saturated sand thickness at 18.5 ft., the Bartlesville sand thickness in the Burbank field ranges from 50 to 80 ft., with porosity ranging from 13.7 to 32.7 percent by volume (J. Melville Sands, A. A. P. G. Bulletin, Volume II, No. 10, p. 1048), and in the Glenn pool the average sand thickness is in excess of 100 ft. (W. B. Wilson, A. A. P. G. Bulletin, Volume

II, No. 10, p. 1064). Therefore, even if it is assumed that the Woodbine sand is much more porous and permeable than the Bartlesville sand, thus containing more oil to start with per unit of sand volume, and also yielding it more readily, it would still appear that maximum average recovery per acre that can be hoped for in the East Texas field will be 10,000 bbl.

It may be of interest to note at this time that other Woodbine sand pools in North Central Texas produced considerably greater amounts of crude oil per acre, notably the Mexia which recovered to-date 32,000 bbl. per acre and the Powell which recovered to-date 42,000 bbl.; while the recently dscovered Van pool is expected to recover some 75,000 bbl. per acre. In all these cases, however, saturated sand thicknesses are greatly in excess of those in East Texas, being over 100 ft. in Mexia and Powell, and probably reaching 300 ft. in the Van. High recoveries in Mexia and Powell fields are due to small area, sharp structural dips and, as a consequence, a very effective water drive. In Mexia and Powell fields the eastward dip ranges from 120 to 200 ft. per mile, while in East Texas pool the westward drip ranges from but 20 to 30 ft. Thus the sand conditions in the East Texas field and its very extensive area of direct oil-water contact will in all probability be contributory to tongue-like encroachment of water, shutting off permanently a considerable proportion of oil. Possibly, the only really effective means of combating uneven encroachment would be a complete shut-down of the field for a certain period of time, as was done in 1931 under the Martial Law ruling; after re-opening the wells it was noted that the bottom hole pressures were increased and equalized in the field, indicating the subsurface re-adjustment of oil and water.

Proration—Kansas

A STATE-WIDE conservation of the natural gas reserves is being planned by the public service commission, which has created an advisory committee to work out rules and regulations.

Western Kansas

SOUTH STUDY field where a large gas well was completed in April, as reported in the May issue of WORLD PETROLEUM, was further proved and extended by two wells. Olsen Drilling Company and Shell Petroleum Corporation No. 1 Johnson in section 24–T23S–R4W had Mississippi chat at 3,254–3,347 ft. and is estimated good for 700 bbl. of crude oil and 7,000,000 cu. ft. of gas per day; Olsen Drilling Company and Cromwell No. 1 Regier, in the same section, had Mississippi chat at 3,265–3,375 ft. and is estimated good for 400 bbl. of crude oil and 500,000 cu. ft. of gas per day. A large field is in prospect in this area, though the development of its deeper major prospective horizons, Viola, Wilcox and Arbuckle, will undoubtedly be delayed until general conditions within the oil industry will show some improvement. (South Study field—No. 41 on the WORLD PETROLEUM map published on page 107 of March, 1932, issue.)

In the Shell-Johnson field (No. 31), near McPherson, discovered early in 1932, the sixth producing well was completed, the Mid-Kansas Oil and Gas Company's No. 1 Bridgen in section 2–T20S–R3W. Potential production of this new well is 2,990 bbl. per day from the Mississippi chat at 2,978–3,030 ft.

Central Western Kansas also witnessed completion of a number of new producers, as well as the spudding of several new tests. In the Stratman field (No. 22) new completions brought the total number of producers in that field to eight with a total daily potential of 14,465 bbl.; also in Stoltenberg field (No. 21) the number of producing wells was brought up to four and its potential production up to 5,276 bbl.

Figures given out by the State Umpire, L. R. Pickrell.

Central Western Kansas Daily Potential on April Shipments

(Figures from L. R. Pickrell, State Umpire)

Pool	Number Wells	Daily Potential bbl.	April Shipments bbl.
Schurr	12	11,988	54,942
Stratman	8	14,465	22,788
Stoltenberg	4	5,276	9,924
Isern	2	1,073	6,152
Richardson	3	4,100	5,155
Sharpe-Cress	1	200	5,006
Heiken	1	1,182	1,575
Greenwalt	1	50	622
Ploog	1	2,000	*
Beyers	1	250	*
Davidson	1	150	*
Total	34	40,734	106,014

* Shut-in

BASIL B. ZAVOICO

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Royal Dutch Dividend Answers Adverse Rumors

ANNOUNCEMENT of a dividend of 7½ percent free of British income tax by the Shell Transport and Trading Company for 1931, and of 6 percent by the Royal Dutch Petroleum Company, has been an excellent reply to the adverse rumors circulating during recent weeks concerning the financial position of the Royal Dutch-Shell Group of petroleum producing and distributing companies.

The rumors, which gained considerable currency in British and Continental markets, were attributed in some quarters to Russian sources and in others to a former associate of the Group, who, having broken with the management, was combining this method of hitting back with bear operation in the market on his own account.

Whatever their origin, the adverse reports had a serious effect on Shell and Royal Dutch shares. On the London market the price of Shell Transports fell to 1$7\frac{1}{16}$, while Royal Dutch shares fell to 10¼.

In self-defence, Lord Bearsted, chairman and managing director of the Shell Transport Company, issued the following statement:

Various rumors have been circulating in financial centers purporting to be authentic information as to the position of the Royal Dutch-Shell Group.

These rumors have every appearance of having been circulated with malicious intent by persons having as their object the achievement of personal gain.

It is unnecessary that any detailed reference be made as to the general trade depression which to-day exists all over the world.

The Shell Company, like every other concern, must feel its effects.

The financial position of the company, and of the concerns with which it is interested, is as strong and as liquid as it has ever been, and it it is the definite policy of those who are directing the affairs of the company to maintain this financial strength in order that there can be no doubt whatsoever as to the company's capability of weathering not only the existing storm but any storm that is likely to arise in the future.

A similar statement was issued by the Royal Dutch Company at The Hague, and the announcements were sufficiently reassuring to cause a substantial recovery in the shares of the two companies.

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THE tanker NORVINN, which recently transported a cargo of Russian motor fuel from Bateoum to Shanghai, China, has since discharged 31,700 bbl. of motor fuel at Cape Town, South Africa. O. A. Sternberg, director, Africa-Russian Oil Products does not anticipate any price war, as his company, he states, has only reduced its price for petrol to meet the marketing conditions in conformity with its sale policy.

RUSSIA

Official Figures of Soviet Oil Operations*

1932	Crude Production (Bbl.)	Daily Average (Bbl.)	Run to Stills (Bbl.)	Drilling (Feet)
January	13,059,900	421,300	11,927,882	152,532
February	12,194,000	420,482	11,428,900	193,185
March	13,852,300	449,197	12,866,700	240,433
April	13,101,200	436,707	12,737,200	250,854
Total	52,207,400	433,119	48,960,682	837,004

Revised quota for 1932—191,800,000 bbl. or 525,400 bbl. daily average.

* Crude oil conversion ratio—seven bbl.—one ton.

Transportation

DIFFICULTIES of transportation on railroads and waterways are disrupting normal operations in fields and refineries. Transportation is lagging behind schedule and overtaxing storage facilities which in turn are threatening to upset the refining plans and forcing proration of production. The Transcaucasian and Northcaucasian railroads which transport oil products from Baku and Grozni are not in a position to supply the required number of tank cars and the tanker fleets of the Caspian and Black seas are reported to be far behind the plans.

Storage facilities of Baku are taxed to capacity and lack of space is bound to upset the regularity of operations. Over 12,000,000 bbl. of refined petroleum products are awaiting transportation from Grozni without hope of immediate relief and over 500,000 bbl. of kerosene had to be discharged into tanks half filled with fuel oil in order to make space for crude which would otherwise have had to be discharged into the sea.

Reports from the railroad oil terminal of Grozni show that it invariably takes twice as much time as necessary to load or empty a tank car. Distance run per day is about 100 kilometers against the required 220.

Irregularities are also reported in the service of the newly erected Armavir-Ukraine pipe line, the terminals of which at Armavir and Bataisk are reported to be alternately either empty or overtaxed owing to the fact that when Armavir is receiving refined oil for transportation the terminal at the other end is invariably lacking transport facilities while the required tank cars are laying idle at some other place.

Difficulties are also reported from the port of Tuapse which handles almost 80 percent of the export gasoline and about 50 percent of the fuel oil exported from Russia. The tanker fleet of Tuapse is registered at the port of Odessa and this naturally causes unnecessary delays and confusion. Orders are being miscarried too often resulting in heavy demurrage. Vessels are often awaiting orders for 50 and 60 hours while it takes 5 to 6 hours to fill the loading capacity of the vessel. Demurrage of 120 hours and more has been incurred by tankers while awaiting orders and 16 contradictory radio messages were received during this time.

Drilling

DRILLING is also somewhat behind schedule. A report on this division of the major oil fields shows that while the results of drilling are satisfactory from the point of distance drilled they are far from being satisfactory when judged by the quality of drilling which is measured by the number of wells put in operation.

Several important Russian oil journals have recently pointed out the dangers which threaten the oil industry from the drilling division owing to mismanagement and lack of efficiency. Drilling in the major oil fields is being done with a view to obtaining footage at the expense of the more important factor of quality in drilling, even at locations where high flush production of light oil is expected. Statistics show that while footage drilled is exceeding the plans for the first four months of the year the number of wells put in operation during the same period is more than 50 percent below expectations and consequently crude production is below plans.

Loss of tools, unsuccessful fishing jobs are occurring more frequently and the use of damaged pipes or low quality tools and equipment without any previous inspection has become a chronic disease in the Baku fields.

A survey of drilling operations at Grozni shows that the spread between the plan and actual accomplishments is growing month by month and that the total for the first four months of the year is below the average for the corresponding period of last year.

On the other hand it should be borne in mind that practically all drilling in Grozni fields is being carried to much lower depths than formerly owing to exhaustion of shallow horizons. This deep drilling requires superior technique and better tools. Results with this new type of drilling are bound to be poor at first.

"Za Industrializatiu" of April 11 in reporting the drilling conference at Grozni states that several resolutions were carried for the improvement of the shortcomings. It looks, however, as if the resolutions were buried as soon as they were carried and all good intentions were forgotten when the conference was over. Drilling speed per rig month of 164 meters attained last year has dropped at present to 120 meters. Seventy breakdowns in the fields of Grozni occurred in February. During the first eight days of March, 30 more such breakdowns were added to the list. Drilling negligence is illustrated by the use of a 10 in. bit in a 1200 meter well where a 9½ in. bit was required. The bit

Loading a Soviet tanker.

got stuck about 75 meters above drilling level in a rocky formation and the well had to be abandoned. Under similar circumstances another well had to be abandoned at a depth of 150 meters which is probably the world's most shallow oil well abandoned. Lack of pipe often makes it necessary to use strings at depths of 800–1000 meters which are fit for use only at 75–80 meters.

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Second Piatiletka Calls for Reduced Export-Production Ratio

RUSSIA'S First Five Year Plan for the oil industry (calling for 151,900,000 bbl. crude by the last year of the plan) has been completed in two and one half years. Production of 156,000,000 bbl. of crude or 11.7 percent of the world's total has placed Russia second among oil producing countries. Now the Second Five Year Plan is under preparation and will begin in 1933.

Seventeenth Congress of the Communist Party has recommended an increase in crude production during the Second Five Year Plan to about threefold the figure for 1932 and to decrease ratio of exports from 24 percent of total production in 1931 to about 13 percent in 1937.

Production-Export Ratio

	Production Bbl.	Export Bbl.	Ratio percent
1931	156,000,000	40,000,000	24
1937	575,000,000	80,000,000	13

A tremendous increase in internal consumption will be necessary to supply motor fuel and lubeoil requirements of the increased motor car and tractor depots of Soviet Russia. The motor car and tractor plants of Stalingrad, Charkoff, Cheliabinsk as well as the Putiloff works are bound to bring up the capacity of the tractor depots of Russia to 14,000,000 h.p. which will require about 100,000,000 bbl. of motor fuel per annum of which 70,000,000 bbl. will be gasoline and ligroin. The number of motor cars in use in Russia is expected to reach 1,600,000 units while the yearly production of the same in 1937 will amount to 700,000 cars.

Total lubeoil requirement for the year 1937 is expected to amount to 21,000,000 bbl. against 9,500,000 bbl. in 1933 and asphalt requirement will amount to 3,000,000 tons with a considerable growth in demand for wax, carbon black, organic acids and coke.

Growth of home consumption and export requirements will determine increases of production and runs to still from year to year during the Second Five Year Plan. Adequate measures will be taken to build storage facilities and transportation facilities.

Crude production of 575,000,000 bbl. planned for 1937 will require the utilization of several new oil regions which are to be developed during the second five year period. Baku and Grozni will supply about 65 percent of the total crude production in 1937 against 85 percent in 1932. Shifting of crude production to other locations is being dictated by the geographical changes which industrial Russia is undergoing.

Increased production is to be made possible by increased exploration drilling and by efforts which will be made to overcome the difficulties of deep and superdeep drilling. The major part of the crude produced during the period is expected to be derived from depths of 8,500 to 10,000 ft. which will require a complete reconstruction of drilling technique and a change to higher rigs, more powerful pumps, stable pipes and Kapelushnkoff drill.

Further rationalization is also planned for the refining division with extension of cracking. The proportion of cracked gasoline of the total is to grow from 20 percent in 1931 to 62.5 percent in 1937. Most of this development will be directed along the lines of vapor phase cracking; of the 220 cracking units which will be erected during the next five years 130 units will be vapor phase and 90 units liquid phase installations.

During 1932 the refining industry will stabilize capacity of the plants at Baku, Batum and Tuapse and to some extent also at Grozni. Building of refineries during the Second Five Year Plan will be concentrated along the Volga river, the Don basin and in the Far East. Plant capacities erected in the inner region of Russia will grow to about 300,000,000 bbl. by 1937.

J. WEGRIN

Statistics of U. S. S. R Second Five Year Plan

Drilling

(Meters)

	1933	1934	1935	1936	1937	
Exploration	359,800	440,000	539,600	662,800	824,300	2,466,700
Exploration-Exploitation	263,200	360,700	514,600	614,800	857,800	2,347,900
Exploration	1,109,600	1,613,100	2,384,800	3,232,400	4,031,800	11,262,100
Total	1,732,600	2,414,800	3,429,000	4,510,000	5,713,900	17,076,700

Crude Production

(Thousands of metric tons)

	1933	1937	Total
Azneft-Baku	19,000	40,000	144,000
Transcaucasus	50	1,000	2,150
Grozneft	10,500	13,300	58,650
Benoi	100	3,000	6,300
Dagestan	50	350	900
Maikop	4,500	9,000	33,200
Kuban	...	1,250	2,450
Emba	500	7,000	15,800
Uzbekstan	500	1,200	4,400
Turkman	50	1,500	3,550
Kalmik region	...	100	150
Region of Middle-Volga river	...	100	150
Ural Ukhta	...	100	150
Central Siberia	...	100	150
Sakhalin	550	2,500	6,500
Total	36,000	80,500	278,500

Refined Products

(Thousands of metric tons)

	1933	1937	Total
Cracked gasoline	796	10,092	27,485
Total gasoline	3,980	16,147	50,432
Ligroin, kerosene	10,562	31,635	104,731
Bright stock	40	120	240
Total lubeoil	1,178	3,099	10,942
Dieseloil	4,001	12,610	39,676
Fuel oil	10,000	12,500	55,500
Asphalt	659	3,517	9,789
All other products	659	5,576	13,812
Total	27,089	68,937	234,456

Pipe Line Construction

3 Caspian Sea to Orsk
1 North Caucasus to Don Basin
1 North Caucasus to Moscow

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A petroleum distributing station is to be erected by Russian Oil Products, Ltd., at Queenstown, Ireland, to service the Southern Irish district. Barges will transport the products to Queenstown from the tank farm at Haulbowline.

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A local concern in Ethiopia is reported to have closed an agreement with a Soviet business agency for a supply of petroleum products that is estimated to exceed the total consumption of petroleum in Ethiopia. Companies marketing petroleum from other countries, although recognizing the Soviet's ability to undersell the high prices prevailing in that country, have formulated no definite policy toward Soviet supplies. They depend on the low quality of Soviet petroleum to discourage the use of this new source of supply.

MEXICO

First Quarter

PETROLEUM production will be considerably greater this year than it was during 1931, it is anticipated from official figures of the petroleum department of the Ministry of Industry, Commerce and Labor placing the output for the first quarter of 1932 at 6,598,083 bbl. This was 323,286 bbl. more than the production during the corresponding period of 1931. Average daily production during the first quarter of 1932 was 94,400 bbl. against 91,000 bbl. during the first three months of 1931.

While not citing figures, the department declares that there was a marked increase in exportations of petroleum and its by-products from this January to March, even though the various companies operating in the Republic stored considerable quantities of these products during the period, because of depressed conditions obtaining in world markets. Production during this quarter reached its maximum in March with an output of 2,967,842 bbl., and the department asserts that exportations attained their height for the quarter during that month. Increases in production and exportations during March are attributed by the department to the bill pending before the American Federal Legislature calling for the elevation of tariffs on foreign petroleum and its by-products inspiring producers and exporters in Mexico to ship copiously to the United States for storage there before the import levies were raised.

More than 3,000,000 bbl. of petroleum and its by-products were exported through Tampico during April, according to estimates announced by the various stevedores' unions of that port. This movement, which was chiefly to the United States, constituted a monthly record that has not been attained for some time.

Association Formed

ASSERTING that the present exploitation of petroleum is "capricious" and of scant benefit to the country and that production is insignificant, the recently organized Association of Mexican Petroleum Interests, a group of small scale producers, land owners, etc., has formulated a program which it expects will enable Mexican enterprises to revive the national oil industry. The Association also hopes to bring about a reduction in the retail prices of petroleum and its by-products. Speakers at a meeting of the organization held in Mexico City accused the great companies operating in the Republic of arbitrarily reducing exploitation and of fixing prices of petroleum and gasoline to an extent that is prejudicial to the industry and the country. They also deplored the fact that Mexico has fallen from second to eighth place in world petroleum production and declared that efforts must be made toward restoring the industry to flourishing conditions it enjoyed ten years ago. Purpose of the Association is:

"To gather and direct suggestions of all in the industry for developing the industry; to petition the Government to change or modify laws and measures governing oil lands, petroleum exploitation and the commerce of petroleum that are deemed necessary; to represent before the Federal Government and those of the States all interested in the petroleum industry respecting all matters that are of interest or benefit to them; to cooperate in the settlement of conflicts arising between petroleum land owners and exploiters of such properties, and to do all that will be beneficial in general petroleum matters which will unify, consolidate and foment the progress of the exploitation of petroleum in the Republic."

Taxes

PETROLEUM production taxes afforded the Federal Government an income of 4,064,445.21 pesos (about $1,354,815.07, U. S., at present exchange rates) last year, while its 1931 revenue from export levies on these products was 2,453, 573.52 pesos (some $817,857.84, U. S.), announces the special taxations department of the Ministry of Finance. The Government's income from these sources in 1930 was 5,317,219.66 and 3,596,077.21 pesos respectively. The department's data show that the peak year in Mexican petroleum history for revenues from production and export levies was 1922. In that year, production taxes yielded 58,374,155.66 pesos and export duties 27,605,988.85 pesos. Last year, however, was much better for the Government than was 1930 in regard to income from gasoline production and importation taxes. In 1931, the revenue from gasoline production was 10,981,612.86 pesos (about $3,660,537.62, U. S.) and from imports 4,500,374.40 pesos, against 9,435,956.21 and 3,622,-842.40 pesos respectively in 1930. Mexico produced 183,026,881 liters of gasoline and imported 75,006,240 liters last year, while her exportations of this product during the period was 1,877,087 bbl.

The Ministry of Finance explains that it ordered the Federal District Municipal Government to cancel the measure which eliminated payment of fees for licenses of motor vehicles in the District, which includes Mexico City, and the substitution of an additional tax of 1½ centavos (about ½ cent) the liter on gasoline in order to allow for discussion of this proposition at the national conference that will be held under the Ministry's auspices in Mexico City during August to seek means of balancing tax matters throughout the country. The plan for obtaining revenues from automobiles was to have gone into effect May 1, and its cancellation inspired some criticism by Mexico City newspapers which prompted the Ministry's explanation.

A uniform retail price for gasoline cannot be established in the Federal District as such action would violate the Federal constitution, the Ministry of Industry, Commerce and Labor has advised the Federal District Gasoline Vendors Union which asked for the establishment of one price as rates for the product range from 16 to 20 centavos (5⅓ to 6⅔ cents) the liter. The Ministry announces that it will intervene if the retailers put prices up to an unreasonable level.

May

THE Imperial Petroleum Company was forced to suspend operation of three shipping terminals at Tampico as a result of a strike including over a thousand workmen. The strike was precipitated by a dispute between the employees and the company over collective labor contracts. The company immediately petitioned the Federal Board of Arbitration and Conciliation to intervene and declare the strike unjustified and consequently illegal.

Claiming that the national treasury had no right to collect the amount, the Mexican Eagle Oil Company (Royal Dutch Shell) has petitioned the Federal Government to refund 31,747 pesos (about $10,582, U. S.) which it paid under protest as part of a special tax to defray costs of dredging Tampico harbor. Treasury contends that it was justified in collecting this sum as there is a provision in the company's concession to lands in the Tampico zone, an instrument which was executed in 1893, that it pay part of dredging and other maintenance costs of the port. Government has ordered an investigation to ascertain whether or not the treasury may continue to collect this levy.

Solicitation for sanction to construct and operate a railway 50 kilometers (about 31¼ miles) long in the Federal petroleum reserves has been made to the Ministry of Communications and Public Works by Engineer Trinidad Paredes, chief of the Administrative Control of National Petroleum, a Federal Government agency. Proposed railway would connect the towns of Arroyo de Agua Dulce and Arroyo del Burro in Minatitlan canton, Vera Cruz State. The object of the line is to facilitate the shipment of materials and machinery to be used for drilling wells in the Federal oil zone and to transport the products of such wells.

Because of unprofitable operation resulting from decreased exportations, the Penn Mex Fuel Co. has been authorized by the Ministry of Industry, Commerce and Labor to close its Tampico shipping terminal.

Largest Producer

MEXICAN Eagle Oil Company, of the Royal Dutch-Shell Group, held first place again last year as Mexico's greatest petroleum producer and exporter. From its 265 wells, this company produced 1,685,312 cu. mtrs., which was 32.1 percent of the entire national 1931 output of 5,252,554 cu. mtrs., and exported 1,426,908 of the 3,577,666 cu. mtrs. of petroleum and by-products Mexico sold abroad during the year. Company paid the Federal Government 1,830,162.56 pesos in production taxes and 1,032,988.71 pesos in export levies last year.

Complaint of what he styles underhand tactics by certain unnamed oil companies in the form of systematic attacks of the Mexico City tabloid press against the Administrative Control of National Petroleum, has been made by its chief, Engineer Trinidad Paredes, to the Ministry of Industry, Commerce and Labor. He asserts in the complaint that criticism of the Control by these newspapers is unwarranted, that while the Control is a Federal Government agency it has to make its own way, and that last year it saved the National Railways of Mexico from 4,000,000 to 5,000,000 pesos on locomotive fuel oil it supplied the enterprise. The Control, Paredes asserted, continues to supply the Railways with fuel despite the competition of the great oil companies in Mexico.

DOUGLAS GRAHAME

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ROUMANIA

Company Reports

THE first Roumanian oil company to publish its balance sheet has been the Astra-Română. Amortizations are practically the same as last year. Last year's net profit of Lei 484,320,399 has been changed this year into a loss of Lei 123,593,425.

Distribuţia Company, which is the distributor for the three leading companies in the home market, shows a loss of over Lei 100,000,000 on a capital of Lei 150,000,000 (as against last year's profit of Lei 1,752,007).

It is obvious that no oil company in Roumania could show real profits for 1931 so that no surprises are to be expected in that direction from the publication of other companies' balance sheets.

Amalgamation Delayed

TO EVERYBODY'S astonishment the bill for the amalgamation of the oil companies with Roumanian capital, presented to the Chamber of Deputies, and very strongly supported by Vasilescu-Carpen, the Minister of Industry and Commerce, has not yet become law. Parliament has now been closed, and the amalgamation, if it ever passes the chamber, will be very much delayed.

As indicated in previous Roumanian notes there are a number of difficulties to be settled yet, and the fact that the IRDP has more than doubled its production in the last fortnight, will reverse the very delicate arrangement of quotas in the new company. The IRDP has now a production of 4,900 bbl. per day, as compared with 7,700–8,400 bbl., the production of Credit-Minier. When we consider that with 2,450 bbl. per day the respective quotas in the new company have been of about 58 percent for the Credit-Minier and 15–18 percent for the IRDP it is evident that in the light of changed proportion of production, quotas will have to be altered also.

The increased production of the IRDP is derived from their Ochiuri (Merişor) Perimeter, and consists of a high grade non-paraffinous crude.

From the latest reliable source it is said now that neither the IRDP nor the Sondajul Companies will enter the Amalgamation in any case, which would mean only an association between the State and the Credit-Minier Company. Sondajul will not become a party to the scheme apparently because of the refusal of the National Bank to back that step. Sondajul belongs to the Blank Bank, which has closed its shutters, and the assets of which are now controlled by Blank's biggest creditor, the National Bank.

The bill for the export of crude has become law, but it is extremely doubtful that for the time being it will be made use of, or will influence the market for crude in Roumania. The law is on the lines indicated in previous notes. The State, as well as the producers without refineries, will be allowed to export their whole production, while the oil companies with refineries may export whatever quantities of crude they produce in excess of 75 percent of their refining capacity.

During 1931 the total quantity of crude exported amounted to 590,020 bbl. although permission was given by the Ministry to producers to export more than four times that quantity.

Drilling

THE biggest drilling activity is carried on in the Gorgoteni-Gura-Ocniţei field. Existence of this field is, however, considerably endangered by a too strenuous drilling activity. The mistake which has ruined the Moreni South Meotic sands is being perpetuated here. Wells are being drilled at distances as small as 80 metres apart and the example of the Româno-Americana well No. 23, which has completely ruined one of the best gushers in Roumania (Metal-Petrol No. 2), shows clearly that a strong action on the part of the mining authorities should instantly be taken.

So far there is no sign of such action being considered, though Mr. Madgearu's 1929 Mining Law maintains the principle of not permitting the drilling of wells on plots of less than three hectares.

E. I. MARGULIUS

CANADA

Imports

IMPORTS of crude during March were up over February at 1,932,433 bbl. compared with 1,388,078 bbl. Of the March total, 288,562 bbl. originated from South America.

Gasoline imports also showed an increase, being 157,323 bbl. in March compared with 105,526 bbl. in March 1931.

Gasoline Enquiry

UNDOUBTEDLY the most important happening in Canada during the month under review is the report of the Banking and Commerce Committee of the House of Commons enquiring into the price of gasoline in Canada. This investigation was the result of a resolution introduced into the House by Western members, who drew attention to the differences in prices of gasoline existing in Canada and the United States.

Committee consumed several weeks in the course of its deliberations, and a large number of witnesses were called. The investigation technically justifies gasoline prices in Canada, but it also demonstrated the futility of investigations by lay minds into highly technical industries. The gasoline probe cost Canada a lot of money, and it took up a lot of the time of executives of oil companies. As stated at the outset, it is probably a blessing in disguise as it will tend to clear the air and definitely place the operations of oil companies beyond question. The whole enquiry and the report are so important that extracts from the text of the latter is given herewith.

YOUR committee has held 22 meetings, and has taken viva voce evidence on oath of 20 witnesses. Numerous exhibits were filed by witnesses.

The aforementioned witnesses represented the following companies: Imperial Oil, Limited; McColl-Frontenac Oil Company, Limited; British American Oil Company, Limited; Shell Oil of Canada, Limited; Eastcrest Oil Company, Limited, and also included individual importers and distributors, in some cases importing direct from the United States, and in other cases purchasing gasoline from Canadian refiners.

The Clarkson commission report of 1926 to the Ontario Government, being a report of an enquiry into the prices of gasoline and oils sold in the province, is incorporated in the evidence taken by your committee.

Pursuant to authorization given by the House, your committee engaged the firm of George A. Touche and Company, chartered accountants. This firm was instructed as follows, namely:

1. That the accounts of the Imperial Oil, Limited, be taken for the purpose of establishing the fundamental facts required by the committee.
2. That a basis of establishing the ascertainment of costs be mutually agreed upon between the auditors and the officers of Imperial Oil, Limited.
3. That for the purposes of the two preceding paragraphs, the investigation be specifically applied against
   (a) The Sarnia and Halifax refineries as regards the elements entering into production costs as a whole and as applicable to proportionate distribution of these total costs against gasoline and other commodities refined from crude.
   (b) The relative wholesale price of gasoline and other commodities refined from crude in relation to costs of production at the Sarnia and Halifax refineries.
   (c) The elements embodied in the selling, distribution and administration expenses, added to the costs of production, in relation to selling prices for Imperial Oil, Limited, as a whole and as specifically applied in the following marketing divisions.
   (d) That such marketing divisions may be designated by your sub-committee.
4. That synonymous with this investigation by the auditors into the aforementioned cost and selling factors of the Imperial Oil, Limited, they secure from British American Oil Company, Limited, and from McColl-Frontenac Oil Company, Limited, statements in such form as will render practicable a comparison of the relative costs and selling prices of the three corporations, thus offering means of disclosing any major variations without entailing the additional expense of investigating the smaller oil companies operating in Canada.

The auditors were also directed to make an examination and audit of the books of the McColl-Frontenac Oil Company with respect to certain operations of that company.

The auditors' report was duly presented to your committee by Mr. O. A. Matthews, a member of the firm of George A. Touche and Company. A summary of the conclusions as set out in the auditors' report is as follows:

(a) That the company's records relating to 1930 operating costs charged to gasoline showed no evidence of "cost loading" by reason of affiliations in the United States and South America, or because of unfavorable accounting practices, but rather, that the gasoline costs, if anything, were understated because of the company's conservative policies in not loading into costs such matters as fire insurance premiums, depreciation rates, contingency reserve charges and inventory pricing.

(b) That the total costs for 1930 were free of charges for interest on capital invested, or such as might be related against funded debt or as a charge imposed by a parent company in the form of rental for use and operation of the refineries and marketing stations and equipment. In other words, the financing of Imperial Oil, Limited, has been effected through the sale of capital stock and the investment of a proportion of surplus earnings in extension of plant and equipment facilities, without any issue of bonds or debentures upon which interest might be charged.

(c) That the 1930 marketing costs charged to gasoline whilst as a whole legitimate from an accounting point of view, were high in relation to total costs. The high cost of marketing is attributed to territorial and climatic conditions, and extreme competition obtaining in the distribution and marketing of gasoline in Canada.

(d) That variations in gasoline prices in 1929, 1930 and 1931 to consumers were not based directly upon ascertained refinery costs, but largely upon the variations in the market cost of crude oil with fluctuating additional charges for excise tax, sales tax, freight surcharge and exchange. It has not been demonstrated that any grounds exist for any allegations that the company has taken unfair advantage of either the specific or dumping duties in its gasoline prices to consumers during the period under investigation.

(e) That the reason for the unfavorable comparison at some points between United States competitive prices and those of the Imperial Oil, Limited, is due to the demoralized conditions of the gasoline industry in the United States, caused by the overproduction of gasoline and various tax evasion "rackets," which, in turn, result in the price of United States gasoline falling far below the relative movements in crude oil prices and other costs of production and distribution.

(f) That the zoning basis of establishing gasoline prices results in the spreading of transportation differentials to the comparative disadvantage of gasoline consumers at centres of trade in proximity to some refineries, whereas the zoning price basis frequently operated to the advantage of gasoline consumers in the territories outlying from the refineries. It was also found that tank wagon gasoline prices are given to farmers and coastal fishermen both East and West.

(g) That in such outlying districts as have no dealer competition or where any dealer association arrangement exists, the spread between Imperial Oil, Limited, tank wagon prices and the prices to the consumer is entirely in the hands of the independent dealers.

(h) That apart altogether from the basis used in the establishing of gasoline prices, the spread between such selling prices and the combined costs of refining and marketing showed an average net profit of not exceeding 1.01 percent per Imperial gallon of all gasoline sold by Imperial Oil, Limited, in the year 1930.

(i) That in view of the fact that the investigation of Imperial Oil, Limited, disclosed no improper accounting practices in the matter of costs or unstated profits, and because Imperial Oil, Limited, occupy the leading position in the gasoline industry in Canada, the auditors gave it as their opinion that the expense which would be in-

volved in extending their investigation into the records of the British American Oil Company, Limited; the McColl-Frontenac Oil Company, Limited, and other oil companies in Canada, would not be justified in view of their findings on the average net profit per gallon gasoline sold by Imperial Oil, Limited, in 1930.

From a consideration of the evidence and the auditors' report, it is the opinion of your committee that the price of gasoline to the Canadian consumer is not unreasonably high, and that the public interest would not be further served by a continuation of this enquiry.

N. S. Lougheed, Minister of Lands for the Province of British Columbia, announces that "Anyone in British Columbia can now stake for oil after 120 days' notice of location. They will pay 50 cents an acre and will have fifteen months in which to get machinery on the ground and get started. If they find oil we will remit half the fees. One half the yield in any such discovery will become the property of the people of British Columbia."

R. C. ROWE

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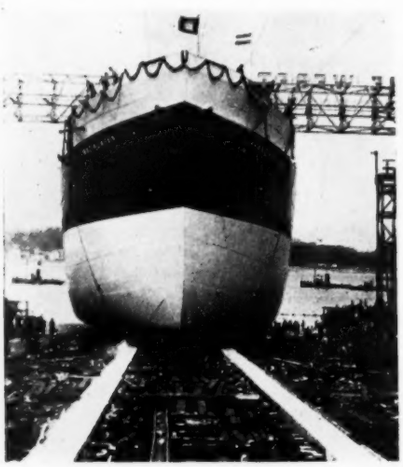
SHIPPING

London: May

AT A shareholders' meeting of Messrs. John I. Jacobs and Company Ltd., Joseph H. Jacobs speaking on the position of tanker tonnage, said that the acute depression in the oil trade still continued, and at present none of their tonnage was employed. There were signs of improvement, but the return to anything like normal conditions would appear to be a long process, and they were obliged to shape their policy in order to cope with the situation which was likely to prevail in the meantime. It was a matter of considerable interest to observe that there had been a material reduction in the volume of laid-up tanker tonnage since the peak figures of 364 tankers of over 3,300,000 tons deadweight in November last. Their records showed that up to the end of March last those figures had been reduced to some 308 tankers, of about 2,800,000 tons deadweight. As regards their own fleet of tankers total deadweight would be increased in consequence of the new Load Line regulations by at least 2,000 tons, bringing the total deadweight up to about 53,500 tons, of which 34,800 tons were under five years old.

Launching the Franz Klasen.



New Tonnage

MESSRS. Furness Shipbuilding Company Ltd. have recently launched a single screw steam tanker, the BRITAMOCO, from their Haverton Hill shipyard in a completely finished condition, except for her propelling machinery, in the remarkably short period of 12 weeks from the laying of the keel. The owners' entire fleet has been constructed by these builders, who recently delivered a sister vessel, the BRITAMLUBE, which arrived in Montreal on May 1. The builders may be called pioneers in this country in the development of a varied series of special oil tankers designed to operate on Canadian service; they have already constructed 28 tankers for Great Lakes service with carrying capacities varying from 500 tons to 4,400 tons, and for coastal service vessels exceeding 16,000 tons. A further launch has taken place with the motor tanker F. J. WOLFE at Vegesack, by the Bremer Vulkan yard for account of the Deutsche-Amerikanische Petroleum-Gesellschaft, a subsidiary of the Standard Oil Company of New York. This ship has a deadweight tonnage of 17,800 and her propelling machinery comprises two 4-cylinder 2-cycle double-acting M.A.N. Diesel engines developing a total of 4500 s.h.p., giving the vessel a speed of 12½ knots. Hull is constructed on the Isherwood system and divided into 27 collier tanks. The most up-to-date navigational equipment is included and consists of a gyro compass, wireless direction finder and automatic steering on a Simplex rudder. The F. J. WOLFE is similar to the FRANZ KLASEN recently launched at the Finkenwarder, Hamburg yard of the Deutsche Werft, for the same owners and forms part of a complete programme of six vessels, two being constructed at Vegesack, two at Finkenwarder and two at Germania Werft, Kiel. Recently published statistics show that the tanker tonnage afloat in the world in 1914 totalled about 1,500,000 tons gross, being three percent of all the tonnage then existing, whereas to-day it amounts to over 8,500,000 tons gross, approximately 12 percent of the existing tonnage.

Chartering

THERE has been a fair amount of enquiry, the bulk of which has been for the carriage of dark oils. Although a fair number of vessels have been chartered, the actual amount of business has been insufficient to improve freight rates. There has been practically no change in the charter, although an enquiry exists for clean and dirty tonnage on time charter party for six months. For clean oils the market still shows little life. There are several new enquiries and a number of vessels have been chartered. A fixture of interest was an 8,000 tonner from Northern States 13/3d. and Gulf 14/3d. to South Africa. Consecutive voyage business is still unfixed, this apparently being due to the situation as regards dry cargo space as very few vessels so fitted are of a convenient size. Market for dark oils continues in a state of inactivity as only two or three vessels have been chartered. The HILDA KNUDSEN, 13,000 tons, has been fixed from the Black Sea to the Continent, option Scandinavia, May–June loading, 7/6d.–8/6d. There is little change in American coasting in this market; two or three vessels, having been fixed for carriage of dark oils on the basis of 13 cents from the Gulf to Northern States.

A. C. HARDY

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OUR cover picture this month is a reproduction of a detail from one of the beautiful mosaics that decorate the new Shell building in Hamburg, Germany. The architectural style of this building and the simplicity and beauty of the decorations have attracted widespread attention.

FINANCE

New York: May

IN THE past month, when the market as a whole has been sinking to new low levels, the oils have given a comparatively good account of themselves. Although ten of the stocks in our tabulation reached new low prices for the year, there were five which made new highs, and the general level of the group was higher at the close of the period than at the close of our previous month's table. Of the 31 stocks, 16 closed higher, 11 closed lower, and 4 showed no change.

That the improvement in the industry since last fall has been no figment of the imagination, but very real and practical, is attested by the many company reports showing that net profits are replacing substantial losses and by resumption of dividends by two companies. Ohio Oil declared a 20 cent payment after a lapse of a year, and Seaboard Oil's 10 cent declaration was its first since 1924.

The general economic picture has not changed materially in the past month, although some encouragement may perhaps be drawn from the fact that certain basic industries have given a better than seasonal performance in May. Construction contracts and automobile production showed gains instead of the more normal seasonal declines, and steel operations held about even with April, whereas their normal May trend is also downward. The financial community (as well as business) continues to be disturbed by political maneuvering in Washington, and the Federal Reserve policy of easing credit through substantial purchases of Government securities has not yet borne fruit in expansion of loans and investments (other than Governments) of the system. It was to be expected, however, that such a program would require time to be effective and the desired results may become evident in the coming months. Adjournment of Congress will remove an important adverse psychological influence and give business a chance to chart its course with greater confidence.

ALTHOUGH the annual report of Socony-Vacuum Corporation for 1931 revealed a net loss of $4,169,248, equivalent to a deficit of 13 cents a share on 31,744,544 shares ($25 par value) outstanding, actual cash income before bookkeeping charges amounted to $1.42 a share. Charges for reserves for depreciation, depletion, amortization and self-carried insurance totaled $49,088,588, equivalent to $1.55 a share. Despite the payment of cash dividends of approximately $43,000,000, financial position at the close of the year was exceptionally strong with current assets of $306,957,381 as against current liabilities of only $47,884,151, or in the ratio of 6.4-to-1. Cash and marketable securities amounted to $63,659,699, substantially in excess of all current liabilities, and exceeded the combined total for Vacuum Oil and Standard Oil Company of New York (the predecessor companies) at the close of the previous year.

The income and balance sheet statements were the first to be released since the formation of the present corporate entity in July, 1931.

IN THE face of operating difficulties which spelled practical elimination of profits to the majority of oil companies Standard Oil (Indiana) reported a relatively favorable showing. Net income after all charges amounted to $17,596,396 equivalent to $1.04 a share on the 16,908,543 shares outstanding at the close of the year. These earnings are after deducting charges for depreciation, depletion retirements and other reserves and a downward adjustment of inventory valuation of $6,101,529. Total charge-offs for these items amounted to $55,564,670. After payment of dividends of $25,481,075 there resulted a deficit of slightly over $8,000,000.

Gross revenues last year were off about 34 percent and net after charges declined about 62 percent. However, on a cash basis (before bookkeeping charges) earnings declined about 38 percent, in approximately the same proportion as the reduction in gross. Whereas the reported net was equal to $1.04 a share, on a cash basis results were equal to $4.33 per share. It is apparent, therefore, that the amount disbursed as dividends, while in excess of the results reported available for this purpose, did not result in any drain upon financial resources. On the contrary, financial position showed a marked improvement over that of a year previous and constituted one of the favorable aspects of the annual report. Total current assets were $243,687,228 against current liabilities of $28,789,501, or in the ratio of 8.46-to-1, compared with ratio of 5.4-to-1 at the close of 1930. Cash and marketable securities amounted to $89,163,504.

ALTHOUGH Pan American Petroleum and Transport was practically the only important oil company that was able to earn more in 1930 than in 1929 (which was due to its new refinery at Aruba, Dutch West Indies), it was not able to overcome the severity of last year's condi-

New York Stock Prices

1932 High	1932 Low	Current Div. $ per Annum	Stock (Par Value $)	April 18 to May 21 Sales (Shares)	First	High	Low	Last	Net Change[1]
12⅞	8⅝	1.00	Atlantic Refining (25)	35,200	10	12	9½	11⅜	+1⅜
5⅞	4	....	Barnsdall 'A' (25)	39,200	4	4½	4	4⅛	....
⅝	⅜	....	Colon Oil (No)	1,000	½	½	½	½	− ⅛
6⅝	4⅛	....	Consol. Oil (No)	134,600	5	5⅜	4¼	5	....
7	4⅝	....	Continental Oil (No)	80,200	5¼	5⅜	4⅝	5⅛	− ⅜
2½	1¾	....	Creole Petroleum (No)	23,600	2	2½	2	2¼	+ ¼
35⅞	25¾	....	Gulf Oil Corp. (25)	16,000	30	33	27½	29½	− ½
49	37⅜	2.00	Humble Oil & Ref. (25)	6,000	39¼	40⅛	37⅜	39½	+1¼
9½	6⅝	0.50	Imperial Oil, Ltd. (No)	52,000	7⅛	8⅜	7⅛	8	+ ⅜
1⅝	1	....	Indian Refining (10)	700	1	1¼	1	1⅛	+ ⅛
10⅝	8¾	1.00	International Petr. (No)	86,300	9	10⅝	8⅞	10⅜	+1½
8½	5	0.80	Ohio Oil (No)	108,200	5¾	8½	5½	7¾	+1¾
34⅜	16	1.60	Pan Amer. P. & T. 'B' (50)	5,700	27	34⅜	22½	33⅛	+7⅛
6½	3½	....	Phillips Petr. (No)	58,300	4⅜	4½	3½	4⅛	− ¼
5⅛	3¼	....	Pure Oil (25)	18,600	4¼	4½	3⅝	4	− ¼
¾	⅜	....	Richfield Oil (No)	2,700	½	½	⅜	½	....
23	12⅛	†0.81	Royal Dutch N. Y. (13⅓)	256,600	15⅜	17⅜	12⅛	16⅛	+ ⅛
9⅞	6⅝	0.40	Seaboard Oil (No)	58,800	7¾	9⅛	7¼	8⅝	+ ⅞
4⅛	2½	....	Shell Union (No)	37,000	3	3⅜	2½	3	+ ⅛
4½	2½	....	Skelly Oil (25)	4,000	3⅛	3½	3	3¼	+ ⅛
10¾	8	0.80	Socony-Vacuum (25)	205,000	8⅞	8⅞	8	8¼	+ ½
27¼	16¾	2.00	Standard Oil of Calif. (No)	137,000	18¾	20⅜	17⅛	18½	− ½
19¼	13⅛	1.00	Standard Oil, Ind. (25)	158,000	15⅛	19¼	14⅞	18½	+3⅜
12⅜	7	....	Standard Oil, Kansas (25)	3,800	7⅛	7⅞	7	7⅞	+ ⅞
15⅞	10	1.60	Standard Oil, Ky. (10)	13,900	11⅜	12⅜	10⅝	11⅛	− ⅜
31½	19⅞	§2.00	Standard Oil, N. J. (25)	821,900	22⅞	26⅜	19⅞	24⅜	+1
32	24¾	1.00	Sun Oil (No)	3,900	28	28	25¾	27	−1
13⅞	10	1.00	Texas Corp. (25)	114,800	11½	11⅞	10	10⅞	− ⅝
3½	2	....	Tide Water Assoc. (No)	31,500	2⅜	2⅜	2⅛	2¼	− ⅛
13⅞	9	1.40	Union Oil of Calif. (25)	27,900	10¾	11	9	9¼	− ⅞
½	1/16	....	Venezuelan Petr. (5)	7,400	¼	¼	1/16	¼	....

[1] Since close of last month's table. † Paid for 1931—no regular rate. § Including extras.

tions and reported a decline in net to 74 cents a share on the combined common and class B common stocks, compared with the 1930 earnings of $4.02 a share.

The sale of the company's foreign properties and business to Standard Oil (New Jersey) has gone forward in accordance with the contract which was discussed in detail in last month's issue of WORLD PETROLEUM, and Standard Oil (Indiana) has turned over to the Jersey company its 94 percent interest in the Pan American subsidiary which was formed to consolidate the foreign holdings and act as the vehicle of transfer.

SHELL Union Oil Corporation is another of the large units to show a further improvement in its financial status, despite a loss of $2,742,300 in the first quarter following a loss of $27,000,000 in 1931. Whereas at the beginning of 1931 the total of cash and call loans was $25,399,656, it had increased to $36,850,-914 at the beginning of the current year and was approximately the same at the end of the first quarter.

The company took advantage of market conditions in 1931 to purchase its own debentures to the amount of $6,331,000 over and above sinking fund requirements of $1,300,000 at 68 percent of face value, thus anticipating sinking fund requirements for some time ahead.

The report for the first quarter revealed a drop in gross revenues of slightly over $7,000,000 from the same period of a year ago, but a severe slash in operating expenses of approximately $11,000,000 enabled the company to make an improved showing in net income before charges, which amounted to $7,836,987 as compared with $2,946,035. The company could very easily resume the payment of dividends on the preferred stock, requirements which amount to only $550,000 quarterly, and will probably do so when indications point to the maintenance of an improving trend.

SEABOARD Oil (formerly Mexican Seaboard Oil) stepped into the dividend paying class for the first time since 1924 by the recent declaration of a quarterly dividend of 10 cents. Report for the first quarter indicated that this action was fully justified as net profit amounted to $180,339, equivalent after all charges to 14 cents a share on 1,244,383 no par value capital shares. Net income in the first quarter of last year was $53,155. Increase in gross revenues and reduction in operating expenses accounted for the improvement witnessed. Current assets at the end of the quarter amounted to $2,386,800 as against current liabilities of only $149,331.

ALTHOUGH Pure Oil sold more gasoline in the fiscal year ended March 31, 1932, than in any similar period in its history, low prices prevented the normal increase in profits. Net income after all charges dropped to $470,177 as compared with $2,617,748 in the preceding year. Despite the 82 percent decline in net the company was able to continue bond service and preferred dividends, reduce the funded debt by approximately $2,000,000 and maintain its financial position on a practical parity with that of the close of the previous fiscal year.

C. C. BAILEY

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Paris: May

A FEELING of suspense seems to hold the Paris Bourse in thrall; transactions have been unimportant this month and new low levels have been attained. Domestic and international situations more than justify such a state of affairs.

At the present moment, the "Caisse d'Epargne" (Savings Bank) has deposits amounting to Fr. 50,000,000,000, an unheard of figure before the crisis and obviously the direct result of extreme nervousness of the investing public whose last vestige of faith disappeared with the Kreuger débacle. Banque de France, whose gold cover amounts to 71 percent is now reducing the number of paper notes in circulation.

It is significant that all the parties belonging to the left in France are in favor of Government enterprises, and it was one of the Deputies belonging to the Radical-Socialist party—Mr. Margaine—who was responsible for the basic principles of the existing petroleum legislation in France. Needless to say a petroleum monopoly was at the back of Mr. Margaine's mind at the time and it is therefore to be feared that France will be saddled with an oil monopoly in the not too distant future.

To add to the general feeling of unrest and insecurity, most of the companies whose shares are quoted on the Paris Bourse have, or are about to publish, their balance sheets. In all the reports, the Board of Directors begin unanimously by drawing the shareholders' attention to the deplorable state of the industry. They go on to try and explain the crisis and finally conclude their reports by announcing insignificant profits, or worse still, losses.

ON June 1 the C.F.P. is due to hold its shareholders' meeting. As the company has not yet entered into a period of active exploitation, the balance sheet will not reveal any sensational items. It is known that the company's deficit now amounts to Fr. 3,353,760 which is not excessive, if the development of the company's services are taken into consideration. On the other hand, Fr. 814,144 were spent in October last when the company's capital was increased from Fr. 205,200,000 to Fr. 315,692,500.

CONCORDIA S. A. announces a net profit of Lei 51,355,972 for 1931 against almost double that sum in 1930. The board proposes to distribute a dividend of Lei 10 this year as compared with Lei 23.25 last year, and to carry forward the balance of Lei 16,172,523. The results obtained by Concordia during 1931 from the production point of view are good, i.e., 859,727 tons—it thus takes the third place among the producing companies in Roumania.

CREDIT General Des Pétroles and Malopolska have both held shareholders meetings recently and have each accepted the conditions proposed for the merger of

Paris Bourse Prices

1931 Div.	1931 Par	Share	April 14 to May 14 First	High	Low	Last	Change	Position on May 14, 1931
30 Lei	500 Lei	Astra Romana	59	59	42	46	−13	95
....	500 Lei	Colombia	60	60	48	51	−9	72
50 Lei	500 Lei	Concordia	42	42	35	35	−7	61
....	500 Fr.	Cdré. Gén des Pétroles act	..	..	..	..	..	..
....	500 Fr.	Cdré. Gén des Pétroles part	..	..	..	..	..	..
....	500 Fr.	Franco Pol. Pétroles act	..	49	40	40	..	54
....	....	Franco Pol. des Pétroles part	..	149	142	..	..	..
1 $	10 $	Franco Wyoming	195	195	160	161	−34	266
20 Fr.	500 Fr.	S. G. des Huiles de Pétrole act	231	231	188	195	−36	352
....	....	" " part	..	57	54	54	..	133
....	500 Fr.	C. Française des Pétroles	..	..	..	..	..	..
....	500 Fr.	C. Industrielle des Pétroles	500	510	499	..	..	814
70 Fr.	500 Fr.	Lille Bonnières Colombes prio	655	663	600	620	−35	885
45 Fr.	500 Fr.	" " ord	405	405	342	342	−63	695
....	500 Fr.	Malopolska act	2750	2775	16	16	−1150	..
....	....	Malopolska part	206	225	141	141	−65	..
....	....	Mexican Eagle	39	39	31	31	−8	45
....	250 Fr.	Omnium Inter. des Pétroles	72	72	58	69	−3	111
50 Fr.	500 Fr.	Pechelbronn	426	449	415	415	−11	697
60 Fr. B.	500 Fr. B.	Petrofina	417	420	376	385	−32	485
240 Fl.	1000 Fl.	Royal Dutch	12950	12950	10575	11780	−1170	22600
24 Fl.	100 Fl.	Royal Dutch 1/10	1320	1320	1075	1196	−124	2280
....	1 £	Shell	184	184	148	157	−27	302
25 Fr.	500 Fr.	Steaua Française	251	255	190	190	−61	150

the two companies which contain the following items:

> 10,000 founders shares of the Credit General Des Pétroles and 45,000 ordinary Malopolska shares are to be exchanged for 95,000 new founders shares of which 50,000 will be taken over by Credit General at the rate of five new shares for one old one, and 45,000 by Malopolska, share for share.

The new company will be known hereafter as the Société Française Industrielle and Commerciale Des Pétroles and the financial year will close on June 30.

LILLE Bonniéres and Colombes among the bigger distributing companies appears to have lost a considerable amount of ground during 1931 and it is probable that the companies balance sheet for the year will come as a shock to shareholders who have been accustomed to receive big dividends in the past.

The obligation imposed by French legislation to stock ¼ of all petroleum products imported is partly responsible for Lille Bonniéres and Colombes' plight at the moment and it would not be surprising if the company passed its dividend altogether this year.

E. J. ANDRE

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London: May

OPERATORS in oil shares have been provided with more incident than profit during the past few weeks. Events of major importance in the oil world have followed each other rapidly, with the result that price fluctuations in the share market have been both wide and erratic. Towards the end of April several of the leaders had fallen to their lowest for the current year, following persistent Continental selling, fears for the final dividends for 1931, and the circulation of adverse rumors concerning the financial position of the Royal Dutch-Shell Group. Royal Dutch were down to 10¼ and Shell Transport to 1716, both prices approximating to the very low figures touched towards the close of 1931. A recovery followed announcement of a satisfactory V.O.C. dividend and publication of the Shell and Royal Dutch statements refuting previous rumors, and the strength of the more active shares spread throughout the market on announcement of plans for the New York stabilization conference. News of the pending acquisition by Standard of New Jersey of the foreign interests of Pan-American also helped the market. Previously created bear positions were closed, and public interest tended to broaden. The higher level of activity, however, has not been maintained, despite satisfaction with the dividend announcements of the big concerns.

London Stock Exchange Prices

1932 High	1932 Low	Last Year's Div. % per Ann.	Share	April 15–May 15 First	High	Low	Last	Change
11/32	9/32	....	Anglo-Ecuadorian	5/16	5/16	9/32	5/16	.....
17/16	13/32	10	Anglo-Egyptian "B"	1 1/8	1 1/4	1 1/16	1 3/16	+ 1/16
2 1/16	1 9/16	15	Anglo-Persian	1 3/1	1 25/32	1 9/16	1 11/16	− 1/16
9/16	13/32	20	Apex Trinidad (5s.)	1/2	9/16	13/32	9/16	+ 1/16
21/32	13/32	....	Attock	9/16	9/16	13/32	13/32	− 1/32
7/32	3/16	5*	Brit. Borneo (6s.)	3/16	7/32	3/16	3/16	.....
3/16	3/16	5 1/4	Brit. Burmah (8s.)	3/16	3/16	3/16	3/16	.....
3/32	1/16	....	Brit. Controlled ($5)	1/16	1/16	1/16	1/16	.....
1/8	3/32	....	Brit. Controlled Pfd. ($5)	3/32	3/32	3/32	3/32	.....
2 3/8	1 13/16	17 1/2	Burmah	2 5/32	2 3/8	1 29/32	2 3/32	+ 1/8
1 3/32	7/32	12c.	Canadian Eagle (No par)	9/32	9/32	7/32	1/4	− 1/32
5/8	1/2	....	Creole (No par)	1/2	9/16	1/2	.....	.....
1/8	1/16	....	Kern River (10s.)	1/16	3/32	1/16	3/32	+ 1/32
1 3/8	3 1/32	10	Lobitos	1 3/16	1 7/32	1 1/32	1 1/32	− 1/32
1 3/32	1/4	6	Mexican Eagle ($4 Mex.)	5/16	5/16	1/4	9/32	− 1/32
45	15 1/2	$1.6	Pan American "B" ($50)	17	45	17	43	+26
1/4	5/32	2 1/2	Phoenix	3/16	3/16	5/32	3/16	.....
20 3/8	10 1/4	6	Royal Dutch (fl. 100)	13 3/4	14 1/16	10 1/4	13	− 3/4
2 1/2	1 9/16	7 1/2 *	Shell Transport	1 13/16	1 7/8	1 7/16	1 21/32	− 3/32
9/32	3/16	4	Steaua Romana	7/32	7/32	3/16	7/32	.....
1 13/32	1 3/16	5	Trinidad Leasehold	1 1/4	1 3/4	1 3/16	1 3/4	+ 1/8
3/16	3/32	....	Untd. Brit. of Trinidad (6s.8d.)	3/32	1/8	3/32	1/8	+ 1/32
1 11/32	3 1/32	10	Venezuelan Oil Concessions	1 1/32	1 1/32	3 1/32	1 1/32	+ 1/8

Nominal value of shares £1 unless otherwise stated by bracketed figures.

* Denotes Tax-free dividend. c. Denotes cents per share.

SHELL Transport's dividend of 7½ percent tax free for 1931, although comparing with 17½ percent for the previous year, was considered quite satisfactory. Announcement by Royal Dutch of only 6 percent, against 17 percent for 1930, was received in the market with less enthusiasm. Although the two companies are partners in the same group, the difference between their dividends has been widened from ½ to 1½ percent, in addition to which the Shell distribution is made without deduction of British income tax. The widening of the spread between the two payments is due in part to the depreciation of sterling, the Shell portion of receipts shared by the two partners being equivalent to a larger proportionate amount in sterling than is the Royal Dutch portion when converted into guilders.

ANNOUNCEMENTS by the junior members of the Royal Dutch-Shell Group exceeded recent modified market expectations. The 10 percent dividend for 1931 on Anglo-Egyptian "B" shares compares with 17½ percent for 1930, and the fact that the company did relatively well may be attributed to the record output established last year. Venezuelan Oil Concessions is also paying 10 percent against 17½ percent, good showing in this case being due to reductions in expenditure on drilling and smaller allowance for depreciation of plant and machinery. The directors state that rates charged for certain plant depreciation in previous years have been proved by experience to be too generous. Lower drilling expenditure is due to curtailment of drilling in conformity with the directors' policy of reducing output to assist measures toward stabilization of production. In pursuance of this policy, the 1931 output represents a reduction of about 16½ percent on the figure for 1930 and over 24 percent on that for 1929. Announcement that the Mexican Eagle and Canadian Eagle first preference dividends would be postponed until early in June led to small declines in quotations for the ordinary shares of the companies concerned.

BY DECLARING a final dividend of 12½ percent, the Burmah Oil directors provided the market with a very pleasant surprise. Total dividend for 1931 is 17½ percent, and although this compares with 22½ percent for the preceding year, and 30 percent for 1929, a total of 15 percent was the most that had been expected for last year. Company's profit figures were also considered highly encouraging, for while net earnings fell from £2,736,013 to £1,869,495, adequate allowances seem to have been made for depreciation and other necessary writings off. A large holding of British and Indian Government securities is among the company's investments, which also include 2,861,990 Anglo-Persian Oil ordinary shares, 700,000 shares in B. O. C. Anglo-Persian Share Trust, 1,000,000 Shell Transport ordinary shares, and a 50 percent interest in the Burmah-Shell Oil Storage and Distributing Company of India, formed in 1928 for combined marketing with the Royal Dutch-Shell.

RESUMPTION of interim dividend payments under present depressed conditions is unusual, but has actually been accomplished by Trinidad Leaseholds. Directors announce an interim of five percent for the twelve months to June 30, 1932, and add that if existing conditions continue, they will eventually recommend a final dividend at the same rate. For 1930–31, a single payment of five percent was made.

ALEC H. DAY

Liquefied Gas

(Continued from page 248)

low, because of insufficient density of population (at least one meter per 100 ft. is considered necessary), financial results may be disappointing. Allowance must also be made for increasing maintenance costs over a period of time. In a brand-new distribution system, such costs are always lowest in the early years; meters are new and register more accurately, mains have not yet developed leaks, main losses are small. As these costs increase, they cut into profits and may account for the difference between failure and success as the company gets older.

Purchasing power of the population served is also a limiting factor; it must be able to pay for installation charges and equipment, and maintain a standard of living which will call for the use of gas at higher rates, on the average, than those charged for gas in larger towns.

Maximum theoretical field for such installations undoubtedly leaves room for much further expansion. There are believed to be some 3,000 communities in the United States with a population ranging from 1,000 to 15,000 each which have no gas service. Of these, 2,000 have a population of 1,500 or more. Of the latter group, there are some 255 in New England alone; franchises for liquefied gas plants were issued by 100 towns in the past three years, of which 50 are in operation and 20 under construction.

Throughout the United States there are over 100 central liquefied gas plants, of which over 85 are butane-air plants supplying gas of 540–570 B. T. U.'s, and the remainder for the most part distribute a gas of much higher B. T. U. content, some supplying pure propane of 2,500 B. T. U.'s. Some 200 franchises were taken out on the Pacific Coast alone last year. Total population served by such systems is some 425,000, using accurate but incomplete statistics.

In twelve cases, such plants have displaced manufactured gas plants whose operating efficiency was necessarily low because of the small size of the operation; in one case, a butane-air plant actually displaced natural gas.

Among the leaders in this development have been the Phillips Petroleum Company through its subsidiary, Philgas Company, largely operating in the East and Middle West, and the Standard Oil Company of California, through the Pacific Public Service Company, on the Pacific Coast. The latter company has a subsidiary in each of the Pacific Coast States, and its program is understood to call for butane-air systems in 100 coast towns; due to readjustments in engineering and perhaps also seasonal and depression considerations, the program was slowed down for a few months, but has been resuming activity and is now believed to be not far from 50 percent achieved.

Phillips was a pioneer in the development of butane-air plants, and also offers engineering service to utility operators who wish to enter the field. A number of companies have been organized to construct and operate such systems, some of them building up groups of local plants. In addition, many of the major public utility holding company groups are experimenting with the system, including the Insull group, Central States Electric, Niagara-Hudson Power, Duke Power, United Light and Power, American Commonwealths Power, etc.

The fascinating possibilities of a new and rapidly growing industry and the relatively small investment required per unit, have also resulted in the entry of a more or less speculative element into the field, who proceed to obtain franchises and then try to raise money locally, or to sell securities of holding companies which have not proved their ability to exist or survive.

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EGYPTIAN GOVERNMENT

SUPPLY OF CRUDE PETROLEUM

The Egyptian Government invites offers for the supply and delivery at the Petroleum Harbour, Suez, Egypt,* of a consignment of crude petroleum not exceeding five thousand tons.

The oil, which may be a natural or synthetic crude, should be free from mineral impurities or other foreign matter and should yield after ordinary large scale distillation in a topping plant :—

(a) A residue which is comparatively free from asphaltic bodies and is suitable without further treatment for use as a fuel in engines of the Diesel or Semi-Diesel type. This residue should remain fluid when cooled, its viscosity at 100°F. (=38°C.) not exceeding the following values :—

Redwoods No. 1 Viscometer	190 second
or Saybolt (Universal)	240 second
or Engler	6·5 degrees.

Its " pour point " (I.P.T. or A.S.T.M. method) should not exceed 5°C.
The residue may consist of gas oil and need not be a crude oil residue ; and

(b) A volatile distillate amounting to from 20% to 40% of the crude petroleum. Roughly half of this should consist of a " Benzine Distillate " with a final boiling point not higher than 190°C., and the remainder of a " Kerosene Distillate " with a final boiling point not higher than 325°C.
None of the constituents need have been chemically refined.

Delivery is desired in July or, at latest, in the early part of August, 1932.

Quotations, preferably in sterling, should be addressed to the Chief Inspecting Engineer to the Egyptian Government, 41, Tothill Street, London, S.W.1, so as to reach him on or before June 15th, 1932.

They should contain full technical particulars of the crude oil, which will be sampled by the Egyptian Government representative before shipment and which must agree with the particulars of the offer.

The Petroleum Harbour at Suez has sufficient depth for tankers of the size required. All necessary facilities for pilotage, berthing, etc., are available. Steam at suitable pressure can be supplied free to the contractor from shore installation.
The Government Refinery tanks are situated less than 2,500 metres from the harbour, and are connected therewith by steel pipe lines, no part of which is less than eight inches diameter.